

Robert J. Huston, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Kathleen Hartnett White, *Commissioner*
Margaret Hoffman, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 18, 2002

CERTIFIED MAIL

Mr. Franklin L. Mills (N6ENV)
American Electric Power
1616 Woodall Rodgers Freeway
Dallas, Texas 75202-1234

Re: Application to Amend and Renew Permit No. 02496 (EPA I.D. No. TX0087726)
Issued to Southwestern Electric Power Company

Dear Mr. Mills:

As of this date, we have not received a response to our letter of September 27, 2002, in which you were to respond by October 27, 2002.

The previously requested items must be submitted to our office no later than December 18, 2002 or the permit application will be removed from our pending records and the permit will be allowed to expire. We have given you every opportunity to respond, therefore, the deadline can not be extended. Please refer to the attached letter dated September 27, 2002 for all deficient items.

This is the final notice you will receive requesting the additional information. Please submit one original and two copies (please submit copies of the cover letter with each requested copy) by the deadline stated above. If you should have any questions, please do not hesitate to call me at (512) 239-4418.

Sincerely,

A handwritten signature in cursive script that reads "Laurie J. Lancaster".

Laurie J. Lancaster
Water Quality Applications Team
Permits Administrative Review Section (MC161)
Registration, Review, and Reporting Division

Enclosures

cc: TCEQ Region 5, Water Program Manager

Robert J. Huston, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Kathleen Hartnett White, *Commissioner*
Jeffrey A. Saitas, *Executive Director*



TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

September 27, 2002

CERTIFIED MAIL

Mr. Franklin L. Mills (N6ENV)
American Electric Power
1616 Woodall Rodgers Freeway
Dallas, Texas 75202-1234

Re: Application to Amend and Renew Permit No. 02496 (EPA I.D. No. TX0087726)
Issued to Southwestern Electric Power Company

Dear Mr. Mills:

We have received the application for the above referenced permit and it is currently under review. Your attention to the following items is requested before we can declare the application administratively complete. Please submit one original and two copies of the complete response within 30 days from the date of this letter.

Please contact Laurie J. Lancaster, Applications Team at (512) 239-4418 if you should have any questions for the following items.

1. Page 2 of the administrative report: You indicated the major amendment is to reduce the monitoring frequency for various parameters at Outfalls 002, 004, 005 and 006. Please indicate which parameters you are requesting to reduce the monitoring frequency for.
2. Item 4.d. on page 4 of the administrative report: You indicated Southwestern Electric Power Company owns the land where the facility is located. The landowners map appears to identify other entities own the land where the facility is located. Please confirm Southwestern Electric Power Company owns all of the land where the facility is located. If Southwestern Electric Power Company does not own all of the land, please identify all of the owners of the land where the facility is located and provide copies of lease agreements or easements between Southwestern Electric Power Company and the landowners. The lease agreements must contain the term of the lease, contain the number of acres being leased, identify the property by legal description or map, be signed by both parties, and authorize the applicant to use the land for the facility.
3. Item 5.g. on page 6 of the administrative report: The USGS topographic map did not show the applicant's complete property boundaries. In addition, the discharge routes for Outfalls 002 and 005 are not highlighted from the point of discharge for three stream miles. Please provide a copied portion of the USGS topographic map showing the applicant's complete property boundaries and highlighting the discharge routes for Outfalls 002 and 005 from the point of discharge for three miles downstream.

4. Signature Page on page 8 of the administrative report: You provided the original signature page signed by the American Electric Power's regional director. You also provided a letter authorizing the regional director to sign the application; however, the letter was from American Electric Power and not a principal executive officer of at least the level of vice president with Southwestern Electric Power Company. Please provide a letter authorizing the regional director to sign the application on behalf of a principal executive officer of at least the level of vice president with Southwestern Electric Power Company.
5. Item 1 on page 11 of the administrative report 1.1: The landowners map does not clearly delineate the property boundaries for the applicant or the landowners. You had indicated that Southwestern Electric Power Company own the land where the facility is located; however, it appears other entities may own portions of the land where the facility is located. In addition, the discharge routes for Outfalls 002 and 005 were not highlighted from the points of discharge for one mile downstream. Also, there are multiple landowners for several of the tracts of land. You must clarify whether the tracts of land are co-owned and if they are not, clearly delineate the property boundaries for each. Because tracts of land were used to cross reference the landowners to their properties, it is difficult to determine whether all of the landowners were identified. In addition, the downstream landowners for Outfall 002 were not identified. If Outfall 002 discharges directly into the Brandy Branch Reservoir, you must clearly delineate the property boundaries of the landowners located along the shoreline and within a ½ mile radius of Outfall 002. Also, the landowners list indicates the address is unknown for several of the landowners. Because of this, you must complete the enclosed landowners affidavit. Please provide a revised landowners map with the following information:
 - provide the scale of the map
 - clearly delineate the property boundaries of the land owned by the applicant and leased by the applicant
 - show the plant site boundaries
 - clearly delineate the property boundaries of the landowners surrounding the land owned and leased by the applicant
 - label the points of discharge for the external outfalls that changes have been requested for (002, 004, 005, and 006)
 - highlight the discharge routes for the external outfalls (only the outfalls that changes have been requested for need to be highlighted) from the point of discharge for one stream mile (002, 004, 005, and 006)
 - clearly delineate the property boundaries for each of the landowners whose property is located on both sides of the discharge route for one mile from the point of discharge for each of the affected external outfalls. (002, 004, 005, and 006). If Outfall 002 discharges directly into Brandy Branch Reservoir, clearly delineate the property boundaries of each of the landowners whose property is located along the shoreline and within a ½ mile radius from Outfall 002.
 - provide a revised landowners list with the names and complete mailing addresses of the landowners identified on the landowners map. Each landowner's name must be cross referenced in numeric order to their property on the landowners map. Please do not use tract numbers for cross referencing purposes. If the land is co-owned, please indicate this.

- if the landowners list changes drastically, provide a 3-1/2 inch diskette using software compatible with WordPerfect or four complete sets of labels. Names and addresses must be typed in the format required by the U.S. Postal Service for machine readability. **Each letter in the name and address must be capitalized, contain no punctuation, and the appropriate two-character abbreviation must be used for the state. Each entity listed must be blocked and spaced consecutively.**
 - provide an additional postage. You provided \$50 for the postage fee when you submitted the application. The \$50 covers the first 100 landowners submitted. For each increment of 100 landowners, you must submit an additional \$50. Please provide the additional postage fee for the landowners list.
 - complete the enclosed landowners affidavit.
6. Item 1.c. on page 11 of the administrative report 1.1: You indicated a land agent for Sabine Mining obtained the names and mailing addresses. Please indicate for what records or source the land agent for Sabine Mining retrieved this information.
7. Item 2 on page 11 of the administrative report 1.1: You provided aerial photographs for this item. This item requires ground level photographs. Please provide ground level photographs of Outfalls 002, 004, 005, and 006. You must also provide a plot plan or map identifying where the photographs were taken and designating which direction the photographer was facing.
8. Below is a portion of the notice of receipt which contains information relevant to your application. Please review the information carefully and indicate if there are any errors. The complete notice will be sent to you once the application is declared administratively complete.

APPLICATION. Southwestern Electric Power Company, 2400 Farm-to-Market Road 3251, Hallsville, Texas 75650, which operates a steam electric power generating facility, has applied to the Texas Commission on Environmental Quality (TCEQ) to amend Texas Pollutant Discharge Elimination System (TPDES) Permit No. 02496 (EPA I.D. No. TX0087726) to authorize the reduction in the monitoring frequencies for name of effluent characteristics via Outfall 002, name of effluent characteristics via Outfall 004, name of effluent characteristics via Outfall 005, and name of effluent characteristics via Outfall 006. The facility is located adjacent to Red Oak Road at a point approximately six miles southeast of the City of Hallsville in Harrison County, Texas. The discharge route via Outfalls 002 and 003 is from the plant site to Brandy Branch Reservoir; thence to Brandy Branch; thence to the Sabine River above Toledo Bend Reservoir. The discharge route via Outfalls 004, 005, and 006 is from the plant site to unnamed tributaries of Hatley Creek; thence to Hatley Creek; thence to Sabine River above Toledo Bend Reservoir. This application was submitted to the TCEQ on September 23, 2002. The permit application is available for viewing and copying at the Marshall Public Library, 300 South Alamo Street, Marshall, Texas.

Further information may also be obtained from Southwestern Electric Power Company at the address stated above or by calling Franklin L. Mills, American Electric Power; at (214)777-1507.

Mr. Franklin L. Mills (N6ENV)
September 27, 2002
Page 4

Please submit the complete response, addressed to my attention by October 27, 2002. If the requested information is not received by the given deadline, pursuant to 30 TAC Chapter 281, the application will be removed from our list of pending applications. If you should have any other questions, please do not hesitate to call me at (512) 239-4418.

Sincerely,

A handwritten signature in cursive script, reading "Laurie J. Lancaster".

Laurie J. Lancaster
Water Quality Applications Team (MC 161)
Permits Administrative Review Section
Registration, Review & Reporting Division

Enclosure

cc: TCEQ Region 5, Water Program Manager

PART 2 - CHECK LIST FOR INITIAL REVIEW OF INDUSTRIAL/MUNICIPAL APPLICATIONS FOR PERMIT

Permit No. 02496

Review Date: _____

MUNICIPAL

- ☐ **Municipal Renewal Application for a permit classified as a Minor Facility** (less than 1MGD final flow): The data completeness review was not required.

Note: A major facility requesting a flow less than 1MGD is processed as a minor facility.

- ☐ **Municipal Renewal Applications for a permit classified as a Major Facility** (final flow is 1MGD or greater), and **Major Amendment, and Applications for New Permit:**

☐ A copy of the data completeness review was provided by the Municipal Permits Team

- ☐ **Municipal Major Amendment Application not renewing the term of the permit and where only the Administrative Report was submitted:** The data completeness review was not required.

- ☐ For new and major amendment applications that propose surface water discharge, the standards review for RWA comments is included

- ☐ Coastal Zone Determination is included

INDUSTRIAL

- ☒ **Industrial Applications for New Permit, Major Amendment and Renewals:** *Data completeness review not provided by Industrial Permits Team at this time*

- ☒ For new and major amendment applications that propose surface water discharge, the standards review for RWA comments is included.

- ☒ Coastal Zone Determination is included

Annual Fees

- ☒ Verified payment of annual fees and found not to be delinquent.
(ensure payment of outstanding fees with Revenues before declaring application complete)

Outstanding fees _____ Account Number _____

Application Fees: Page 1 - ☐ Appropriate item checked and copy of check provided - ☐ or payment verified in receipt book

Industrial Application fees

EPA Classification	New	Major Amend.	Renewal
Minor facility not subject to categorical standards	<input type="checkbox"/> \$350	<input type="checkbox"/> \$350	<input type="checkbox"/> \$315
Minor facility subject to categorical standards	<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,215
Major facility	N/A *	<input checked="" type="checkbox"/> \$2,050	<input type="checkbox"/> \$2,015

* All new industrial facilities are designated as minors until formerly classified as a major by EPA.

Municipal Application fees

Proposed/Final Phase Flow	New/Major Amendment	Renewals
< .05 MGD	<input type="checkbox"/> \$350.00	<input type="checkbox"/> \$315.00
≥ .05 but < .10 MGD	<input type="checkbox"/> \$550.00	<input type="checkbox"/> \$515.00
≥ .10 but < .25 MGD	<input type="checkbox"/> \$850.00	<input type="checkbox"/> \$815.00
≥ .25 but < .50 MGD	<input type="checkbox"/> \$1,250.00	<input type="checkbox"/> \$1,215.00
≥ .50 but < 1.0 MGD	<input type="checkbox"/> \$1,650.00	<input type="checkbox"/> \$1,615.00
≥ 1.0 MGD	<input type="checkbox"/> \$2,050.00	<input type="checkbox"/> \$2,015.00

☒ The type of application is indicated and provided. **Page 2**

☒ Reason for major amendment. **Page 2**

The legal entity is confirmed as:

- ☒ **Corporation:** Check with Secretary of State (SOS) at: <https://direct.sos.state.tx.us/acct/acct-login.asp> 512-463-5555 to verify the entity status and charter number. Print the page showing correct legal spelling of applicant's name. Check spelling with SOS against the way name is submitted in Item 1. (Permit must be issued in name as filed with SOS.) The applicant must be "In existence" before the application can be processed further.
- ☒ **Those entities subject to state franchise taxes:** If applicable, check with Comptroller (website at: <http://ecpa.cpa.state.tx.us/coa/coaStart.html> or 1-800-252-1386) to verify the: ☐ entity is in good standing; ☐ tax identification number is correct. ☐ Print document from Comptroller's internet site showing applicant to be in good standing at time application processed. **(NOTE: Application cannot be processed if entity is not in good standing - temporary good standing is not sufficient)** Non-profit organizations and partnerships are not subject to franchise tax
- ☐ **Individual:** The person(s) who own(s) the treatment facility. Individual information must be completed if application is made in the name of an individual, **as required by Chapter 26.027c of the Texas Water Code.**
- ☐ **Utility District:** Check in the WUD or I-WUD to verify that district is not dissolved (inactive is O.K. to process). NOTE: Must be a non-dissolved district listed in WUD or I-WUD in order to apply for a permit in the name of the district.
- ☐ **Trust:** A copy of an executed trust agreement is provided by the applicant. Verify that applicant's name is the same as the name in the trust agreement. NOTE: Executed trust shows signatures of trustees or beneficiaries forming the trust and which county it is recorded in.
- ☐ **Partnership:** Verify with Secretary of State (SOS) that partnership is registered, active, and has a charter number. Check spelling with SOS against the name submitted in Item 1. Print page from SOS website. **OR** if the partnership is not listed with the SOS, a **copy of the partnership agreement** is provided by the applicant. The agreement must ☐ give the name of the partnership as provided on the application for permit; ☐ give names of partners; ☐ bear signatures of the partners; ☐ state the terms of the partnership; and ☐ must be recorded in the county where the facility(plant) is located.
- ☐ **Governmental Agencies:** confirm the legal name of the agency when possible, using TNL City official book, State Directory. Examples: I.S.D.; County; State Agencies; Federal Agencies; Water Authority.

- ☒ Verify that the address to be used on the permit is provided. **Item 1.a., page 2 or in core data form.**
- ☒ Verify correct mailing address on the USPS or FEDEX website- print page with valid address
- ☒ Verify operator information if required to apply as co-permittee with facility owner. **Item 1.b., page 2**
- ☒ Verify that contact information is provided for the point-of-contact during application processing. **Item 2, page 3**

Notice of Receipt and Intent: Items 3a. - 3d., pages 3 and 4

- ☒ Verify that name and phone number of one person responsible for publishing NOR is provided.
- ☒ Verify method of sending NOR package is provided.
- ☒ Verify name and phone number of contact to be in NOR is provided.
- ☒ Verify location where application will be available for public viewing & copying is provided and is in the county where the facility is located - the location must be a public building supported by public funds.
- ☒ The existing TCEQ permit number and expiration date are listed. **Item 4.a, page 4**
- ☒ The existing NPDES permit number and expiration date are listed, if not a TPDES permit yet. **Item 4.a, page 4 (APPLIES TO DISCHARGE PERMITS ONLY)**
- ☒ The county where the facility and outfalls are located is provided (note on contact (blue) sheet for county mailing) **Item 4.b., page 4**
- ☒ Owner of the facility identified in the application is the same as the name given in Item 1. **(For new permits only:** A copy of an executed option to purchase agreement may be provided to show that applicant will have ownership upon permit approval.) **(NOTE: THE OWNER OF THE FACILITY IS REQUIRED TO APPLY FOR THE PERMIT.** (Refer to legal policy memo for complete definition and discussion of facility.) **Item 4.c, page 4**
- ☒ Owner of the land where permitted facility is located is the **SAME** as the applicant. **(For new permits only:** A copy of an executed option to purchase agreement may be provided to show that applicant will have ownership upon permit approval.) **Item 4.d, pg 4 of industrial; pg 5 domestic**
- ☐ The owner of the land on which the facility is located is **DIFFERENT FROM** the owner of the facility, and:
 - ☐ The treatment facility **IS** a fixture of the land (Example: in ground, concrete units halfway in ground, treatment ponds, holding ponds, etc.) and the owner of the land has applied as a co-permittee with the owner of the treatment facility (30 TAC, Subchapter 305.43) **or** provided a copy of a deed recorded easement giving the applicant sufficient property rights meeting the standards as provided by legal staff.
- OR**
- ☐ The treatment facility is **NOT** a fixture of the land. The applicant has provided a copy of a lease agreement or recorded easement giving the applicant authorization for use of the land on which the treatment plant is located for the duration of the permit.

Irrigation Site Owner: Item 4.e, page 4 industrial; page 5 domestic

- ☐ N/A - (no irrigation proposed)
- ☐ If irrigation is authorized in permit or proposed, the applicant **OWNS** land on which irrigation site is located.
- ☐ If applicant **DOES NOT OWN** land where irrigation site is located, a long-term lease agreement is provided which includes ☐ a term of at least 5 years, ☐ and is current or if the lease term has passed it includes an option to renew the term, ☐ is between the current applicant and the landowner.

Sewage Site Owner: Item 4.f, page 4 industrial; page 5 domestic

- ☐ N/A - (no sludge disposal proposed)
- ☐ If sludge is authorized in permit or proposed, the applicant **OWNS** land on which irrigation site is located. For current permittees check the permit under Sludge Provisions to determine if sludge is authorized

- ☒ The written location description of the facility is adequately described. (Note on blue sheet if correction of previously permitted description has been made.) **NOTE: PERMIT-PERMITS ARE SITE SPECIFIC A NEW LOCATION REQUIRES A NEW PERMIT** Item 5.a, page 5
- ☒ For discharge permits, the discharge route description is adequately described. The applicant must describe the discharge route to the nearest major watercourse. If existing, check the description given in the application against the current permit to make certain the discharge route has not changed. **NOTE: CHANGING THE POINT OF DISCHARGE REQUIRES A MAJOR AMENDMENT.** Item 5.b., page 5
- ☐ If irrigating effluent, the written location description of the effluent disposal site is adequately described. Item 5.c., page 5 (**NOTE: A CHANGE IN LOCATION OR INCREASE IN ACREAGE REQUIRES A MAJOR AMENDMENT**)
- ☐ If irrigating effluent, the written flow of effluent from the facility to the effluent disposal site is adequately described. Item 5.d., page 5
- ☐ For TLAP permits, applicant has named the nearest watercourse to the disposal site. Item 5.e., page 5 industrial; page 6 domestic
- ☐ For permits that allow sewage disposal on property owned/controlled by applicant, the location description is adequately described. If existing, check the description to ensure location has not changed. Item 5.f., page 5 industrial; page 6 domestic
- ☒ An **ORIGINAL** USGS 7.5 minute topographic map is provided and labeled showing: ☐ boundaries of the facility; ☒ point of discharge; ☒ highlighted discharge route for one mile downstream or until it reaches a classified segment which ever comes first; ☐ irrigation site(s); ☐ pond(s); ☐ sludge disposal/land application site; and ☐ an area of not less than one mile in all directions of the site. Item 5.g., page 5 industrial; page 6 domestic
- ☒ Verify if facility/outfall is subject to Edward Aquifer rules. Item 5.i., page 6 domestic; Item 5.h. on page 6 industrial
- ☒ The name of the nearest community has been provided. (Note on blue sheet for notice) Item 5.i., page 6 industrial; core data form for domestic or look on USGS topographic map
- ☐ For domestic facilities, the applicant has identified whether ownership of the facility is public, private or both. Item 5.j, p 6
- ☒ New and major amendment requests - a copy of correspondence requesting authorization for the discharge into a city, county, state or flood control district drainage ditch is provided. Item 5.k, page 6 domestic; Item 5.j., page 6 industrial
- ☒ The applicant has identified whether or not they are on Indian land (If yes, we do not have permit authority.) Item 5.l., page 6 domestic; Item 5.k., page 6 industrial
- ☒ Identified at least two (2) principal executive officials of entity. Item 6.a, page 6 industrial; page 7 domestic (As long as we have the name, address, and telephone number of at least one individual, do not request additional information.)
- ☒ Listed any former TCEQ/TCEQ employees who were paid for services regarding this application. Item 6.b, page 6 industrial; page 7 domestic
- ☒ For those applications involving a daily average flow of 5 million g.p.d. or more: the names of all counties located within 100 miles downstream from the point of discharge is provided. Item 6.c, page 6 industrial; page 7 domestic

The appropriate signature, as indicated below has been provided, and has been properly notarized - need operator signature only if required to be co-permittee Page 8 industrial; Page 9 domestic

Owner Operator

- ☐ ☐ City: elected official
- ☐ ☐ Individual: only the individual signs for himself/herself.
- ☐ ☐ Corporation: at least the level of vice president (CEO, Chairman of Board, Secretary can be equivalent to V.P.)
- ☐ ☐ Utility District: at least level of vice president, (Board of Directors, District Manager, the position can be verified through the District Section of TCEQ, Water Utilities Division).
- ☐ ☐ Water Authority: Regional managers.
- ☐ ☐ Independent School Districts: at least level of the Assistant Superintendent or board members.
- ☐ ☐ Governmental Agencies: Division Directors or Regional Directors.
- ☐ ☐ Partnership: General Partner as identified in the partnership agreement OR if the partnership is on file with the Secretary of State. The Vice President or General Partner may sign.
- ☐ ☐ Trust: The trustee that has been identified in the trust agreement.
- ☐ ☐ A letter of authorization for another person to sign on behalf of an entity has been provided or is on file with TCEQ. The letter includes both the name and the title of person giving the authority.)

Supplemental Permit Information Form (SPIF) - Only Required for TPDES Individual Permits

Pages 9 - 10 industrial; pages 10 - 11 domestic

- ☒ The SPIF has been provided with all items completed including USGS map and photographs for Fed. Agencies.

Core Data Form - Required for new permit applications (for co-permittees a core data form is required for each permittee) Only required for existing permittees if there is a change to the core data, i.e.: ownership change, name or address change

- ☐ Check that the Core Data Form has been provided.

THE FOLLOWING ITEMS ARE FOR ALL NEW OR AMENDMENT APPLICATION (Page 11 industrial, Page 12 domestic)

Landowners adjacent to the applicant's property include: Item 1

- ☐ The applicant's complete property boundaries are delineated which includes boundaries of contiguous property owned by the applicant.
- ☐ For domestic facilities, show the buffer zone and identify all of the landowners whose property is located within the buffer zone.
- ☐ The property boundaries of the landowners surrounding the applicant's property has been clearly delineated on the map. OR If the applicant owns a large tract of land, the map must show the location of the facility within their property boundaries and show a one mile radius of the facility within their property and show the landowners that are adjacent to the applicant's property line within the 1 mile distance. (No need to go further than one mile distance for adjacent property owners.)
- ☐ The location of the facility within applicant's property is shown.

For TPDES applications

- ☐ The point(s) of discharge is clearly identified on the map and the discharge route(s) is highlighted.
- ☐ The scale of map is provided to measure one mile downstream or if discharge is into a lake or stream affected by tidal, ½ mile up & down stream is measured.
- ☐ The property boundaries of landowners adjacent to the discharge route(s) for one mile downstream from the point of discharge have been clearly delineated and the route is clearly delineated. OR If discharge is into a lake or stream affected by tidal, the property boundaries of landowners ½ mile up & downstream and those property owners across the lake along the shore line that fall within a ½ mile radius of the point of discharge are clearly delineated on the map.

For applications proposing an irrigation site or additional acreage for irrigation

- ☐ The boundaries of the irrigation site within the applicant's property are clearly identified on the map.
- ☐ The boundaries of landowners surrounding the property boundaries where the irrigation site located.

If the applicant owns a large tract of land where the irrigation is proposed

- ☐ the irrigation site is clearly delineated within the applicant's property
- ☐ a one mile radius from the site is indicated
- ☐ a scale is provided
- ☐ landowners immediately adjacent to the applicant's boundaries that fall within the 1 mile radius is indicated

For applications requiring landowner mailing lists:

- ☒ Disk or four sets of labels were provided. (Disk was verified to meet requirements) If the labels/disk are not to format and the list has a few landowners please type the list on the disk - do not indicate as deficiency. **Item 1.b.**
- ☐ Verified source of landowners names and mailing addresses were provided. **Item 1.c.**
- ☒ Provided response regarding permanent school fund land - if information filled out on General Land Office, indicate yes on contact sheet for notice. **Item 1.d.**

MUNICIPAL NEW & MAJOR AMENDMENT APPLICATIONS Item 2

NOTE: ONLY APPLIES TO MAJOR AMENDMENTS WHEN AN INCREASE OF FLOW IS PROPOSED OR NEW UNITS ARE TO BE CONSTRUCTED A SUBSTANTIAL CHANGE TO THE FACILITY.

- ☐ Buffer zone map (8 ½ by 11) which includes:
 - ☐ The applicant's property boundaries, each treatment unit, and clearly identifies the distance from each unit to the property line, showing the required buffer zone (Chapter 309.13) to be by ownership
 - ☐ The required buffer zone by ownership
 - ☐ The required buffer zone is not by ownership -
 - o restrictive easement
 - o nuisance odor control
 - o variance -
 - o a written variance request is included with the application before admin complete

MUNICIPAL AND INDUSTRIAL NEW & AMENDMENT APPLICATIONS

- ☐ The original ground level photographs of proposed facilities, disposal or discharge areas have been provided and have been cross-referenced to a site map. **Item 2 Industrial; Item 3 domestic**

THE FOLLOWING ITEMS ONLY APPLY TO MUNICIPAL MINOR RENEWAL APPLICATIONS:

- ☐ The existing permitted design flow (including all permit phases) is indicated **Item 1, page 1 of Tech Report**
 - Flow indicated is greater than permitted, a major amendment is required - outline in NOD items required for major amendment
 - Flow indicated is less than permitted, confirm with applicant that they are requesting to reduce flow
- ☐ For facilities that have not been constructed the anticipated construction and operation dates is provided for all phases. **Item 1., page 1 of tech report**
- ☐ The type of treatment plant has been indicated. **Item 3.a., page 1 of tech report**
- ☐ The flow diagram has been provided. **Item 3.b., page 1, tech report**
- ☐ The list of units and their dimensions have been provided **Item 3.c., page 1, tech report**
- ☐ The required grab sample test results have been provided for all constituents - *not required if plant not operational.* **Item 4., page 2, tech report**
- ☐ Sludge disposal is authorized off site (not under the control of the permittee), and the ultimate sludge disposal method has been identified. **Items 6 - 8, pages. 2-3 of technical report**
- ☐ Sludge disposal and/or land application is authorized in the permit on property owned or under their control
 - a complete Sewage Sludge Technical Report is provided check for ☐ required signatures **pg 4 of SSTR**, ☐ acreage of site ☐ acreage application area, ☐ site boundaries on USGS map - **pg 5 of SSTR**
 - the applicant is disposing or land applying sludge on land owned or under their control but it is not authorized in their permit or by any other TCEQ authorization a major amendment is required
- ☐ For TPDES permits - the stream data has been addressed **Worksheet 2.0 for all TPDES facilities**
- ☐ The permit authorizes irrigation/evaporation/subsurface disposal method, and the irrigation/evaporation/subsurface information has been addressed in the technical report. If the acreage is more than is currently permit, give the applicant an opportunity to revise the application for major amendment. **Worksheet 3.0., pages 13 - 14, tech report**
- ☐ If the applicant has a permitted phase equal to or greater than 1 MGD or more than one phase, and interim or final phase(s) that has not been constructed has a flow equal to or greater than 1 MGD, the applicant must perform the all of the required effluent testing in the application to renew that phase. **Worksheet 4.0, pages 17 - 21, tech report**
- ☐ If a domestic facility is labeled as public or both, Worksheet 6.0 must be addressed. **Pages 26 - 29, tech report**

THE FOLLOWING ITEMS ONLY APPLY TO INDUSTRIAL APPLICATIONS

- ☐ Description of type of activity and general nature of business **Item 1.a., page 1 of Tech Report**
- ☐ The existing permitted design flow for all outfalls is indicated **Item 4, page 6 of Tech Report**
 - Flow indicated is greater than permitted, a major amendment is required - outline in NOD items required for major amendment
 - Flow indicated is less than permitted, confirm with applicant that they are requesting to reduce flow
- ☐ The permit authorizes irrigation/evaporation/subsurface disposal method, and the irrigation acreage has been addressed in the technical report. If the acreage is more than currently authorized, a major amendment is required. **Worksheet 3.0., pages 3-1 thru 3-5, tech report**



ZIP Code Lookup

ZIP+4 Code Lookup Results

Below is the correct ZIP+4 Code from the address information that you provided.

[Lookup another ZIP Code >](#)

Official Postal Format

2400 FM 3251
HALLSVILLE TX 75650 -7634

Mailing Industry Information

Carrier Route: R002
County: HARRISON
Delivery Point: 00
Check Digit: 7

[Lookup another ZIP Code >](#)

- ▶ [Frequently Asked Questions](#) about ZIP Code Look-Up.
- ▶ Now that you have the information you want,
go to our [Shipping center](#) for our shipping solutions
- ▶ For integrating ZIP Code Lookup capabilities into your web site or application system, please visit our [Web Tools](#) (APIs) or find additional addressing products at [Address Information System Products](#) (AIS).



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BUSINESS ORGANIZATIONS INQUIRY - VIEW ENTITY

Filing Number: 1211806 **Entity Type:** Foreign Business Corporation
Original Date of Filing: June 4, 1947 **Entity Status:** In existence
Formation Date: N/A
Tax ID: 17203234558 **FEIN:**
Name: SOUTHWESTERN ELECTRIC POWER COMPANY
Address: PO BOX 660164
 DALLAS, TX 75266 USA
Fictitious Name: N/A
Jurisdiction: DE, USA
Foreign Formation Date: N/A

<u>REGISTERED</u>	<u>FILING</u>	<u>ASSUMED ASSOC</u>
<u>AGENT</u>	<u>HISTORY NAMES</u>	<u>MANAGEMENT NAMES</u>
<u>ENTITIES</u>		
Name	Address	Inactive
CT CORPORATION SYSTEM	350 N. ST. PAUL STREET DALLAS, TX 75201 USA	

[Order](#)
[Return to Search](#)

Instructions:

- To place an order for additional information about a filing press the 'Order' button

Texas Taxes / Certification of Account Status

Franchise Tax Certification of Account Status

Return to: [New Corporation Search](#) | [Corporation Search Results](#)

Certificates for filing with the Secretary of State to dissolve, merge, withdraw, or convert are not available through this Web site at this time.

Certificate of Account Status

Officers And Directors Information

Company Information	SOUTHWESTERN ELECTRIC POWER COMPANY AEP PO BOX 16428 COLUMBUS, OH 43216-6428
Status	IN GOOD STANDING NOT FOR DISSOLUTION OR WITHDRAWAL THROUGH NOVEMBER 15, 2002
Registered Agent	CT CORPORATION SYSTEM 350 N. ST. PAUL STREET DALLAS, TX 75201
Registered Agent Resignation Date	
State of Incorporation	DE

File Number	0001211806
Charter/COA Date	June 4, 1947
Charter/COA Type	COA
Taxpayer Number	17203234558

ca-003(Rev. 09-06-99)

For help, see Detailed Instructions.

Should you require assistance concerning the corporate information presented, please contact tax.help@cpa.state.tx.us.

FAX _____

DATA ENTRY _____

TO: Water Program Manager
Region 5, Tyler Office

FROM: Jan Sills, Water Resource Liasion
Field Operations Divison

SUBJECT: Notice for Wastewater Permit Site Assessment

A permit site assessment is required for the following wastewater permit application.

WQ Permit Number 02496

Applicant Southwestern Electric Power Company

Region 5

County Harrison

() New Application

☒ Major Amendment

Date Application Mailed to Region 9/23

Date of Notice for PSA _____

() Yes ☒ No Receiving Water Assessment Required

Type of Inspection PA

Due Date for Submittal of Inspection Report _____

If essential material is missing in the application which would preclude you from conducting the permit site assessment, please contact me as soon as possible at 463 - 7838.

Additional Comments: no RWA required (intermittent stream, freshwater lake) - G.

Easley 9/23/02

INDUSTRIAL/MUNICIPAL APPLICATIONS ROUTE SHEET

New _____

Major Amend X

Minor Amend _____

Renewal X

Major Facility X

Application Reviewer ✓ Technical Reviewer _____

DATE APPLICATION RECEIVED 9/23/09

PERMIT NUMBER 62496

PRE REVIEW BY STANDARDS (RWA) 9/23 N/A _____
(APPLIES TO NEW AND MAJOR AMENDMENTS, DISCHARGE ONLY)
(THE ORIGINAL APPLICATION MUST BE RETURNED TO THE APPLICATIONS TEAM WITHIN 4 HOURS OF RECEIPT)

PRE TECH REVIEW REQUIRED 9/23 N/A _____
(COPY OF APPLICATION)

COASTAL ZONE DETERMINATION _____ N/A _____
(ROUTE COPY OF NEW APPLICATION WHEN THE FACILITY IS LOCATED IN THE NOTED COUNTY)

COMMENTS ARE DUE TO APPLICATIONS TEAM BY CLOSING ON 9/30

PRE TECH REVIEW PERFORMED BY _____

THE ATTACHMENT SHOULD BE PROVIDED TO THE APPLICATIONS TEAM AT THE END OF THE 5TH WORKING DAY.

COASTAL ZONE DETERMINATION

(TO BE VERIFIED UPON RECEIPT OF THE APPLICATION)

PERMIT NUMBER CD496

COUNTY Harris

Indicate Type of Application:

☒ **RENEWAL, MINOR OR MAJOR AMENDMENT APPLICATION:**

Is the facility on the Coastal Zone list?

☐ **YES - (Coastal Zone statement will be included in the "Notice of Draft Permit") (If a major amendment statement will be included in the "Notice of Receipt)**

☒ **NO - (Do not include statement in any notice)**

☐ **NEW APPLICATION:**

Is the facility located in one of the following counties:

Aransas	Galveston	Kleberg	Refugio
Brazoria	Harris	Liberty	San Patricio
Calhoun	Jackson	Matagorda	Victoria
Cameron	Jefferson	Nueces	Willacy
Chambers	Kenedy	Orange	

☐ **YES - Send the application to Toxicity Team for Coastal Zone Determination.**

☐ **NO - No further review needed (Do not include statement in any notice)**

Toxicity Team's determination: Is the discharge in the Coastal Zone?

☐ **YES - Coastal Zone statement shall be included in the Admin Complete Notice.**

☐ **NO - Do not include statement in the Admin Complete Notice.**

Return to Applications Team by _____



September 19, 2002

Certified Mail—Return Receipt Requested 7001 0360 0001 3150 1756

Executive Director
Texas Natural Resource Conservation Commission
P. O. Box 13087
Austin, Texas 78711-3087
Attn: Registration, Review, & Reporting Division
Permits Administrative Review Section (MC 161)
Water Quality Applications Team

RE: Southwestern Electric Power Company (SWEPCO)
Henry W. Pirkey Power Plant (Pirkey)
TPDES Permit No. 02496

Dear Applications Team:

On behalf of SWEPCO and Pirkey, American Electric Power hereby submits one original and three copies of an application for amendment and renewal of the subject permit.

The required application fee of \$2,050.00 will be submitted to the TNRCC Revenues Section under a separate cover letter, as required. A copy of the check is attached as per the instructions for completion of the application.

Please be advised that Outfalls 003, 004, and 005 were sampled as per instructions from the Wastewater Permits Section. These Outfalls are associated with storm water (only) collection ponds, and are normally only discharged at the facility under controlled circumstances (after additional treatment, if necessary). For purposes of this application, water was sampled directly out of the Lignite pond (corresponding outfall is Outfall 003) due to the fact that the facility did not intend to discharge from this pond during the renewal process. Additional chemical treatment would have been provided to reduce levels of Selenium in the Lignite pond if a controlled discharge had actually been planned.

Outfalls 004 and 005 were sampled specifically for this application. These outfalls would normally only discharge during or after periods of wet weather, after treatment of the collected storm water, and under controlled circumstances. Water levels in the Landfill pond (Outfall 004), and Limestone pond (Outfall 005), however, were significantly low prior to the sampled discharge events for this application. The low water levels contribute to scouring of pond sediments near the discharge valves as the water rushes through the area near the valves. The resulting agitated and turbid discharges near the outfalls contain correspondingly elevated levels of TSS and/or Iron in the sample analyses for those outfalls.

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Water Quality Applications Team

To compare and illustrate this fact, water was sampled directly from the Landfill pond on Thursday, August 22, 2002, and the corresponding analytical result for Iron was <20 ug/l. The TSS analytical result from this sample was 3 mg/l. The water from the Limestone pond was sampled directly out of the pond on Monday, July 22, 2002. The concentration of Total Iron was 149 ug/l for the initial test, and 185 ug/l for the duplicate analysis. The TSS analytical result from this sample was 2 mg/l. The facility contends that the elevated levels of TSS and Iron present during the application sampling events would not have been present if pond water levels in both ponds had been higher (which is more normal), and associated suspended solids (turbidity) were not impacting the controlled discharges.

In addition, the facility utilizes Ferric Sulfate in the Landfill pond to precipitate metals (Selenium) prior to any controlled discharges. The resulting precipitated solids would be expected to contain correspondingly higher concentrations of these metals in conjunction with the turbidity associated with the aforementioned controlled discharge event. We ask for your consideration with respect to these facts.

Please call me at (214) 777-1507 if you have any questions concerning the enclosed application.

Sincerely,



Franklin L. Mills
Environmental Specialist I
Water & Ecological Resource Services

Enclosures

C: Arne Melson (W/)
Oliver Jefferson (W/O)
Kelly Spencer (W/O)
Joel Tomme (W/O)
Mark Griffith (W/O)
Ron Lighthall (W/O)
Russ Draves (W/O)
David Hall (W/O)
File PRK.180.45.30.2002 (W/)

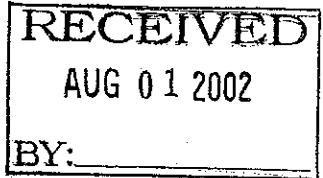
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Water Quality Applications Team

Check Date: 07/31/2002

Check No. 3000019279

Invoice Number	Invoice Date	PO Number	Voucher ID	Gross Amount	Adjustments	Paid Amount
TPDES02496	07/26/2002		00327432	2,050.00	0.00	2,050.00

Pamala J York / Franklin L Mills Dallas, N 6 ENV



Vendor Number	Vendor Name		AEP Service Corporation P O Box 24400 Canton, OH 44701 330/438-7102
0000101588	TNRCC		
Total Amount	Total Adjustments	Total Paid Amount	
\$2,050.00	\$0.00	\$2,050.00	

THE FACE OF THIS DOCUMENT HAS A COLORED BACKGROUND - NOT A WHITE BACKGROUND



AMERICAN ELECTRIC POWER SERVICE CORPORATION

P O Box 24400

Canton, OH 44701

CITIBANK, N.A.
New Castle, DE 19720
62-20/311

3000019279

Date 07/31/2002

AEP America's Energy Partner™

\$2,050.00

DOLLAR TWO THOUSAND FIFTY AND XX / 100 DOLLAR ZERO ZERO

Pay *****TWO THOUSAND FIFTY AND XX / 100 DOLLAR*****

To The
Order OfTNRCC
P O BOX 13088
AUSTIN, TX 78711-3088

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Water Quality Applications Team

Pay Amount \$2,050.00***

Authorized Signature

THIS DOCUMENT IS PRINTED ON WATERMARKED PAPER - HOLD TO LIGHT TO VIEW

⑈3000019279⑈ ⑆031100209⑆ 38647192⑈

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

INDUSTRIAL WASTEWATER PERMIT APPLICATION

**SUBMISSION CHECKLIST - SUBMIT THIS WITH THE APPLICATION
DO NOT SUBMIT THE INSTRUCTIONS WITH THE APPLICATION**

INDICATE IF THE FOLLOWING ARE INCLUDED IN THE APPLICATION.

WORKSHEET	Y	N	WORKSHEET	Y	N
ADMINISTRATIVE REPORT 1.0	✓		WORKSHEET 6.0		✓
ADMINISTRATIVE REPORT 1.1	✓		WORKSHEET 7.0	✓	
SPIF	✓		WORKSHEET 9.0		✓
TECHNICAL REPORT 1.0	✓		USGS MAP	✓	
WORKSHEET 1.0	✓		AFFECTED LANDOWNER MAP	✓	
WORKSHEET 2.0	✓		FLOW DIAGRAM	✓	
WORKSHEET 3.0		✓	SITE DRAWING	✓	
WORKSHEET 4.0	✓		ORIGINAL PHOTOGRAPHS	✓	
WORKSHEET 4.1		✓	SOLIDS MANAGEMENT PLAN		✓
WORKSHEET 5.0		✓	WATER BALANCE		✓

Please indicate by a check mark the amount submitted for the application fee:

EPA Classification	New	Major Amend.	Renewal	Minor Amend./Mod.
Minor facility not subject to categorical standards promulgated by the EPA (40 CFR Part 400-471)	_____ \$350	_____ \$350	_____ \$315	_____ \$150
Minor facility subject to categorical standards promulgated by the EPA (40 CFR Part 400-471)	_____ \$1,250	_____ \$1,250	_____ \$1,215	_____ \$150
Major facility	N/A *	✓ _____ \$2,050	_____ \$2,015	_____ \$450

* All facilities are designated as minors until formerly classified as a major by EPA.

A COPY OF THE CHECK MUST BE SUBMITTED AS PART OF THE APPLICATION

For Commission Use Only:

Segment Number 505 County Harris
 Expiration Date 4-1-03 Region 5
 Proposed/Current Permit Number 02496 TX 0087726

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SEP 23 2002

Water Quality Applications Team

ADMINISTRATIVE REPORT 1.0 - INDUSTRIAL

THE FOLLOWING IS REQUIRED FOR ALL APPLICATIONS, RENEWAL, NEW AND AMENDMENT.

The instructions MUST BE FOLLOWED while completing the application. Failure to do so will result in significant delays in the processing of the application.

Type of application: (check all that apply)

<input type="checkbox"/> New TPDES	<input type="checkbox"/> New TLAP
<input checked="" type="checkbox"/> Major amendment to existing permit	<input type="checkbox"/> Minor modification to permit
<input checked="" type="checkbox"/> Renewal of existing permit	<input type="checkbox"/> Minor amendment to permit
<input type="checkbox"/> Storm water only discharges	

If applying for an amendment/modification to a permit, briefly describe the reason for the proposed amendment.

The facility is proposing to amend the permit to include reduced monitoring frequencies for various parameters at Outfalls 102, 302, 002, 004, 005, and 006.

1. APPLICANT INFORMATION (Instructions, Page 13)

a. Facility owner*: Southwestern Electric Power Company

Charter Number (issued by the Texas Secretary of State): 0001211866

Mailing address for use on the permit and permit correspondence:

Street No. 2400 Street name: FM 3251 Street type _____

P.O. Box _____ City: Hallsville State: TX Zip code: 75650

Telephone number: (903) 935-2101

Tax Identification Number issued by the State Comptroller: 72-0323455

Charter Number (issued by the Texas Secretary of State): 0001211866

* Owner of the facility must apply for the permit

Check one: ☐ The TNRCC has issued this Customer Reference Number to the owner. CN: _____

☐ The owner has not yet received a Customer Reference Number. A completed Core Data Form (TNRCC-10400) listing the owner as a customer and this facility as the regulated entity is attached to this application.

b. Co-Permittee information (complete only if the operator must be a co-permittee)

Facility operator: _____

Mailing address for use on the permit and permit correspondence:

Street No. _____ Street name: _____ Street type _____

P.O. Box _____ City: _____ State: _____ Zip code: _____

Telephone number: _____ Date of Birth: _____

Tax Identification Number issued by the State Comptroller: _____

Charter Number (issued by the Texas Secretary of State): _____

Check one: ☐ The TNRCC has issued this Customer Reference Number to the co-permittee. CN: _____

☐ The co-permittee has not yet received a Customer Reference Number. A completed Core Data Form (TNRCC-10400) listing the co-permittee as a customer and this facility as the regulated entity is attached to this application.

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Water Quality Application Team

Provide a brief description as to the need for a co-permittee.

c. Individual information (complete only if the facility owner or co-permittee is an individual)

Name: _____ Check one: _____ Male _____ Female

State Identification Number: _____

Date of Birth: _____

Assumed business or professional name: _____

Home address:

Street No. _____ Street name: _____ Street type _____

P.O. Box _____ City: _____ State: _____ Zip code: _____

Telephone number: _____

Business name: _____

Check one: _____ The TNRCC has issued this Customer Reference Number to this person. CN: _____

_____ This person has not yet received a Customer Reference Number. A completed Core Data Form (TNRCC-10400) listing this person as a customer and this facility as the regulated entity is attached to this application.

2. CONTACT INFORMATION (Instructions, Pages 14)

Name: Franklin L. Mills (N6ENV) Company: American Electric Power

Telephone number: (214) 777-1507 Fax number: (214) 777-1380 E-Mail: flmills@aep.com

Street No. 1616 Street name: Woodall Rodgers Street type: Freeway

P.O. Box _____ City: Dallas State: TX Zip code: 75202-1234

Check one or more: ☒ Administrative contact ☒ Technical contact

Name: _____ Company: _____

Telephone number: _____ Fax number: _____ E-Mail: _____

Street No. _____ Street name: _____ Street type: _____

P.O. Box _____ City: _____ State: _____ Zip code: _____

Check one or more: _____ Administrative contact _____ Technical contact

3. NOTICE INFORMATION (Instructions, Page 14)

a. Individual publishing the notices

Name: Franklin L. Mills (N6ENV) Telephone number: (214) 777-1507

Company: American Electric Power Fax number: (214) 777-1380

Street No. 1616 Street name: Woodall Rodgers Street type: Freeway

P.O. Box _____ City: Dallas State: TX Zip code: 75202-1234

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Water Quality Applications Team

b. Method of receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package and Instructions
(Check one)

_____ E-mail: E-mail address: _____
_____ Fax: Fax number: (214) 777-1380
_____ Overnight/Priority mail: (self addressed, prepaid envelope required)
☒ Regular Mail: Street No. 1616 Street name: Woodall Rodgers
Street type: Frwy. P.O. Box _____ City: Dallas State: TX Zip: 75202-1234

c. Contact in the notice

Name: Franklin L. Mills Telephone number: (214) 777-1507
Company: American Electric Power Fax number: (214) 777-1380
Street No. 1616 Street name: Woodall Rodgers Street type: Freeway
P.O. Box _____ City: Dallas State: TX Zip code: 75202-1234

d. Public place information

Location of public building: Marshall, TX
Public building name: Marshall Public Library
Name: Patsy Harmon Telephone number: (903) 935-4465
Street No. 300 Street name: South Alamo Street type: St.
City: Marshall County: Harrison State: TX Zip code: 75670

4. FACILITY INFORMATION (Instructions, Pages 14-15)

a. State/TPDES Permit No. 02496 Expiration date: April 1, 2003
NPDES Permit No. TX0087726 Expiration date: n/a
Check one: _____ The TNRCC has issued this Regulated Entity Reference Number for this facility. RN: _____
_____ No Regulatory Entity Reference Number has been received for this facility. One or more completed Core Data Forms (TNRCC-10400) listing this facility as the regulated entity is attached to this application.

b. Plant Name: Pirkey Power Plant

County in which the facility is located: Harrison

County in which the outfall is located: Harrison

c. Owner of the facility: Southwestern Electric Power Company

d. Owner of land where the facility is/will be: Southwestern Electric Power Company

If not the same as the facility owner, there must be a long term lease agreement in effect for at least six years. In some cases, a lease may not suffice - see instructions

Street No. 2400 Street name: FM 3251 Street type: _____
City: Hallsville State: TX Zip code: 75650

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Water applications team

e. Ownership of effluent disposal site: n/a

If not the same as the facility owner, there must be a long term lease agreement in effect for at least six years

Street No. _____ Street name: _____ Street type: _____

City: _____ State: _____ Zip code: _____

f. Owner of sewage sludge disposal site: n/a

only required if authorization is being sought in the permit for sludge disposal on property owned/controlled by the applicant

Street No. _____ Street name: _____ Street type: _____

City: _____ State: _____ Zip code: _____

5. LOCATION INFORMATION (Instructions, Pages 16-17)

a. Is the location of the facility used in the existing permit correct: ☒ Yes ☐ No

If no, or a new permit application, please give an accurate description:

b. Is the point of discharge and discharge route in the existing permit correct: ☒ Yes ☐ No

If no, or a new or amendment permit application, please give an accurate description:

c. If a TLAP, is the location of the effluent disposal in the existing permit accurate: ☐ Yes ☐ No

If no, or a new or amendment permit application, please give an accurate description: n/a

d. If a TLAP, provide the flow of effluent from the treatment facility to the effluent disposal site. n/a

e. For TLAP applications, please identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: n/a

f. Is the location of the sewage sludge disposal site in the existing permit accurate: ☐ Yes ☒ No ☐ N/A
If no, or a new permit application, please give an accurate description:

g. Provide a USGS Map with all required information. Indicate by a check mark that the information is provided.

<input checked="" type="checkbox"/> Applicant's property boundary	<input checked="" type="checkbox"/> Treatment plant boundaries
<input checked="" type="checkbox"/> Point of discharge and highlighted discharge route	<input type="checkbox"/> Effluent disposal site boundaries
<input checked="" type="checkbox"/> All ponds	<input type="checkbox"/> Sewage sludge disposal site
<input checked="" type="checkbox"/> 1 mile radius and 1 mile downstream information	<input type="checkbox"/> New and future construction

h. Is the facility located in Bexar, Comal, Hays, Kinney, Medina, Travis, Uvalde, or Williamson County?
☐ Yes ☒ No

If yes, additional information concerning protection of the Edwards Aquifer may be required.

i. Identify the name and distance to the nearest city from the facility: Hallsville, TX - 5 miles

j. Is/will the treated wastewater discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch? ☐ Yes ☒ No

If yes, indicate by a check mark if: ☐ Authorization granted ☐ Authorization pending
For new and amendment permit applications, provide copies of letters that show proof of contact and upon receipt, the approval letter.

k. Is the facility located on or does the treated effluent cross Indian Land? ☐ Yes ☒ No

6. MISCELLANEOUS INFORMATION (Instructions, Page 17-18)

a. Provide two names of individuals that can be contacted during the permit term.

Name: Paul Franklin Telephone number: (214) 777-1759
Company: American Electric Power Fax number: (214) 777-3777
Street No. 1616 Street name: Woodall Rodgers Street type: Freeway
City: Dallas State: TX Zip code: 75202-1234

Name: Arne Melson Telephone number: (903) 935-2101
Company: Southwestern Electric Power Company Fax number: (903) 927-5840
Street No. 2400 Street name: FM 3251 Street type:
City: Hallsville State: TX Zip code: 75650

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Water Quality Applications Team

b. List each person formerly employed by the TNRCC who represented your company and was paid for service regarding the application. n/a

c. For all applications involving an average daily discharge of 5 million gallons per day or more, provide the names of all counties located within 100 statute miles downstream of the point(s) of discharge.

Texas: Harrison, Panola, Sabine, Shelby

Louisiana: Caddo, DeSoto

d. Please provide the address for receiving self-reporting/DMR forms:

Company: Southwestern Electric Power Company Department: c/o Pirley Power Plant

Name: Attn: Arne Melson, Plant Manager

Street No. 2400 Street Name: FM 3251 Street Type:

P.O. Box City: Hallsville State: TX Zip code: 75650

Please provide the address for receiving Annual Billing Invoices:

Company: American Electric Power Department:

Name: Attn: David Hall (N6ENV)

Street No. 1616 Street Name: Woodall Rodgers Street Type: Freeway

P.O. Box City: Dallas State: TX Zip code: 75202

7. SIGNATURE PAGE (Instructions, Page 18)

I, Paul Franklin Regional Director
Typed or printed name *Title*

certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

Signature: Paul Franklin Date: 9-18-02

Subscribed and Sworn to before me by the said PAUL FRANKLIN on this
18th day of SEPTEMBER, 2002

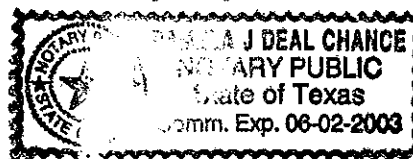
My commission expires on the 2nd day of JUNE, 2003

[Signature]
Notary Public

DALLAS

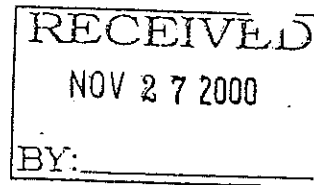
County, Texas

[SEAL]



NOTE: If co-permittees are necessary, both entities must submit separate Signature Pages.

American Electric Power
1816 Woodall Rodgers Freeway
Dallas, TX 75202
www.aep.com



November 22, 2000

Mr. Jeffrey A. Saitas - Executive Director
Texas Department of Natural Resources
P.O. Box 13087
Austin, TX 78711-3087

Re: Signatory Authority for AEP System TPDES Permits,
Licenses, and Reports in Texas

Dear Mr. Saitas:

This letter updates the Signatory Authority for the AEP-WTU, AEP-SWEPCO, and AEP-CPL facilities in Texas (see Attachment). The persons holding the positions identified in this submittal have the necessary responsibility and authority to ensure that accurate applications as required by 30 TAC 305.44a and reports as required by 30 TAC 305.128 are prepared for the TPDES program.

The following corporate positions are authorized to sign wastewater permit applications for the AEP power generation facilities listed on the attachment:

- Vice President Fossil & Hydro Operations
- Fossil & Hydro Operations Directors

The following corporate positions are authorized to sign reports related to wastewater permits held by the AEP power generation facilities listed on the attachment:

- Vice President Fossil & Hydro Operations
- Fossil & Hydro Operations Directors
- Plant Managers of facilities listed on the attachment
- Plant Operation Supervisors of facilities listed on the attachment
- Water and Ecological Resource Services Manager

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Water Quality Applications Team

Burns
President
Hydro Operations
7 1086
777 3379

Mr. Jeffrey A. Saitas
November 22, 2000
Page 2

I would appreciate it if you would distribute this letter to the appropriate individuals within your organization. If you have any questions, please contact Russ Draves, Manager Water and Ecological Resource Services at (214) 777-1381.

Sincerely,



R. T. Burns
Vice President - Fossil and Hydro Operations

cc: Russ Draves
TNRCC Water Quality Management Information Systems, Enforcement
Division

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Water Quality Applications Team

Attachment

AEP Texas Facilities

Facility	TPDES/State Permit No.	NPDES Permit No.
La Palma	01256	NA
J.L. Bates	01254	NA
Laredo	01200	NA
Eagle Pass	04149	NA
H.W. Pirkey	02496	NA
Wilkes	01331	TX0062006
Lone Star	01464	NA
Knox Lee	01307	NA
Welsh	01811	NA
Rio Pecos	00961	NA
Oak Creek	00997	NA
San Angelo	01152	NA
Nueces Bay	01490	NA
Oklaunion	02574	NA
Lake Pauline	00962	TX0009342
Barney M. Davis	01490	NA
Ft. Phantom	01422	TX0002666
Abilene	00964	NA
E.S. Joslin	01303	NA
Coletto Creek	02159	TX0070068
Lon C. Hill	01255	NA
Paint Creek	00963	NA
Victoria	01165	TX0003603
Frontera	04051	NA
Newgulf	03891	NA

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Water Quality Applications Team

ADMINISTRATIVE REPORT 1.1 - INDUSTRIAL

THE FOLLOWING IS REQUIRED FOR NEW AND MAJOR AMENDMENT APPLICATIONS

1. AFFECTED LANDOWNER INFORMATION (Instructions, Pages 19-20)

a. Indicate by a check mark that the landowners map or drawing, with scale, includes the following, as applicable.

- ☒ The applicant's property boundaries
- ☒ The plant site boundaries within the applicant's property boundaries
- ☒ The property boundaries of all landowners surrounding the applicant's property
- ☒ The point(s) of discharge and highlighted discharge route clearly shown for one mile downstream OR if the point of discharge is into a lake, bay estuary or effected by tidal, delineate the approximate property boundaries of the landowners along the watercourse ½ mile in all directions of the outfall(s).
- ☒ The boundaries of the effluent disposal site, all evaporation/holding ponds within the applicant's property
- ☐ The property boundaries of all landowners surrounding the property boundaries where the effluent disposal site is located
- ☐ The boundaries of the sludge use/disposal/incineration site and the property boundaries of landowners surrounding the applicant's property boundaries where the sewage sludge beneficial site is located
- ☐ The property boundaries of landowners within ½ mile in all directions from the applicant's property boundaries where the sewage sludge disposal site and/or incineration site are located

b. Indicate by a check mark which format the landowners list is submitted: ☒ Disk ☐ 4 sets of labels in the required format

c. Indicate by a check mark that the list of landowners is cross-referenced to the landowners map: ☒
Provide the source of the landowners' names and mailing addresses: Land agent for Sabine Mining (owned by AEP)

d. As required by Texas Water Code 5.115, is any permanent school fund land affected by this application?
☐ Yes ☒ No

If yes, provide the location and foreseeable impacts and effects this application has on the land(s):

2. ORIGINAL PHOTOGRAPHS (Instructions, Page 21)

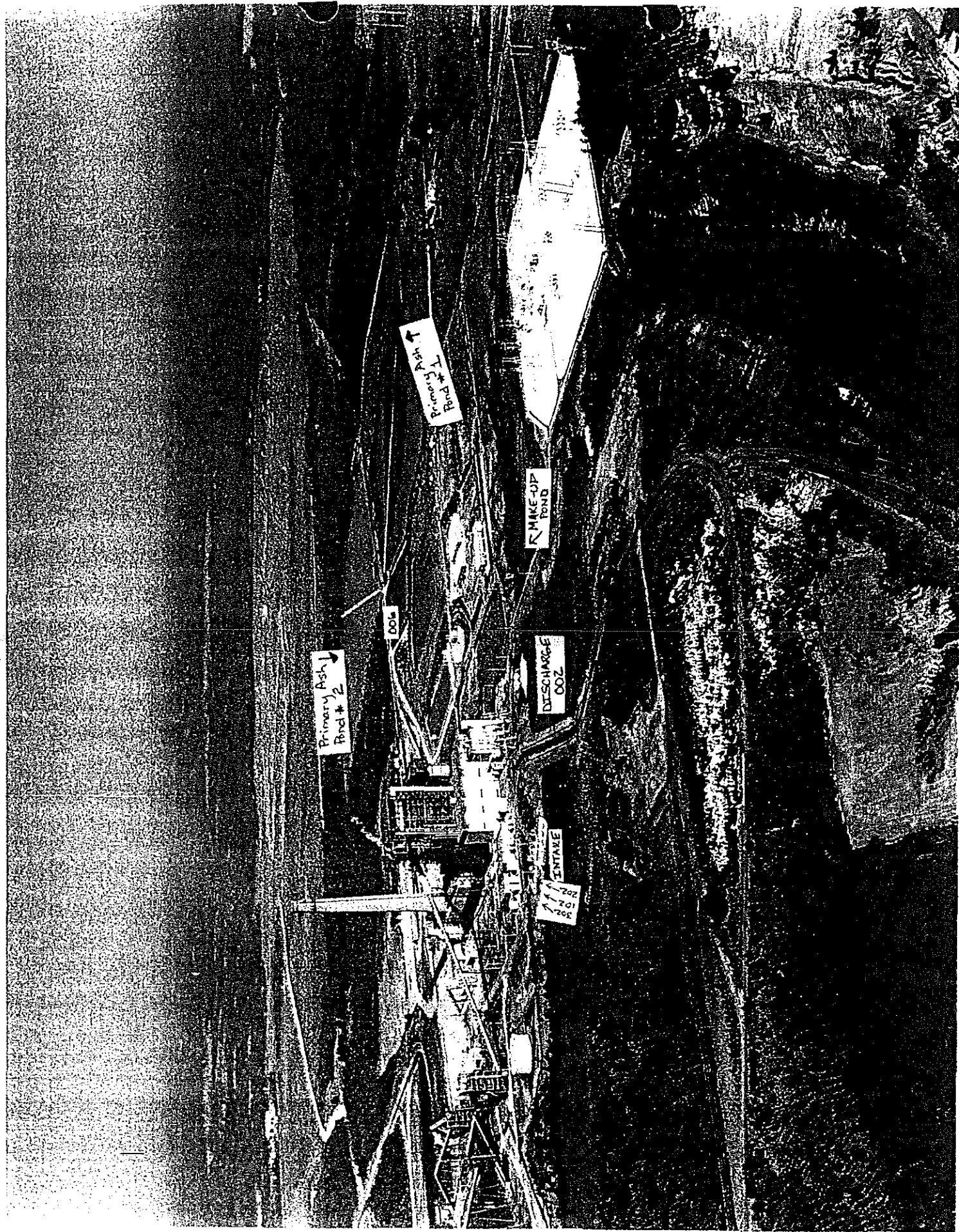
Provide original ground level photographs. Indicate by checking that the following information is provided:

- ☐ At least one original photograph of the new and/or expanded treatment unit location.
- ☒ At least one original photograph showing the proposed/existing point of discharge and as much area downstream as can be captured on film. If the discharge is to an open waterbody, show as much area on both sides of the point of discharge as can be captured on film.
- ☐ At least one photograph of the existing/proposed effluent disposal site.

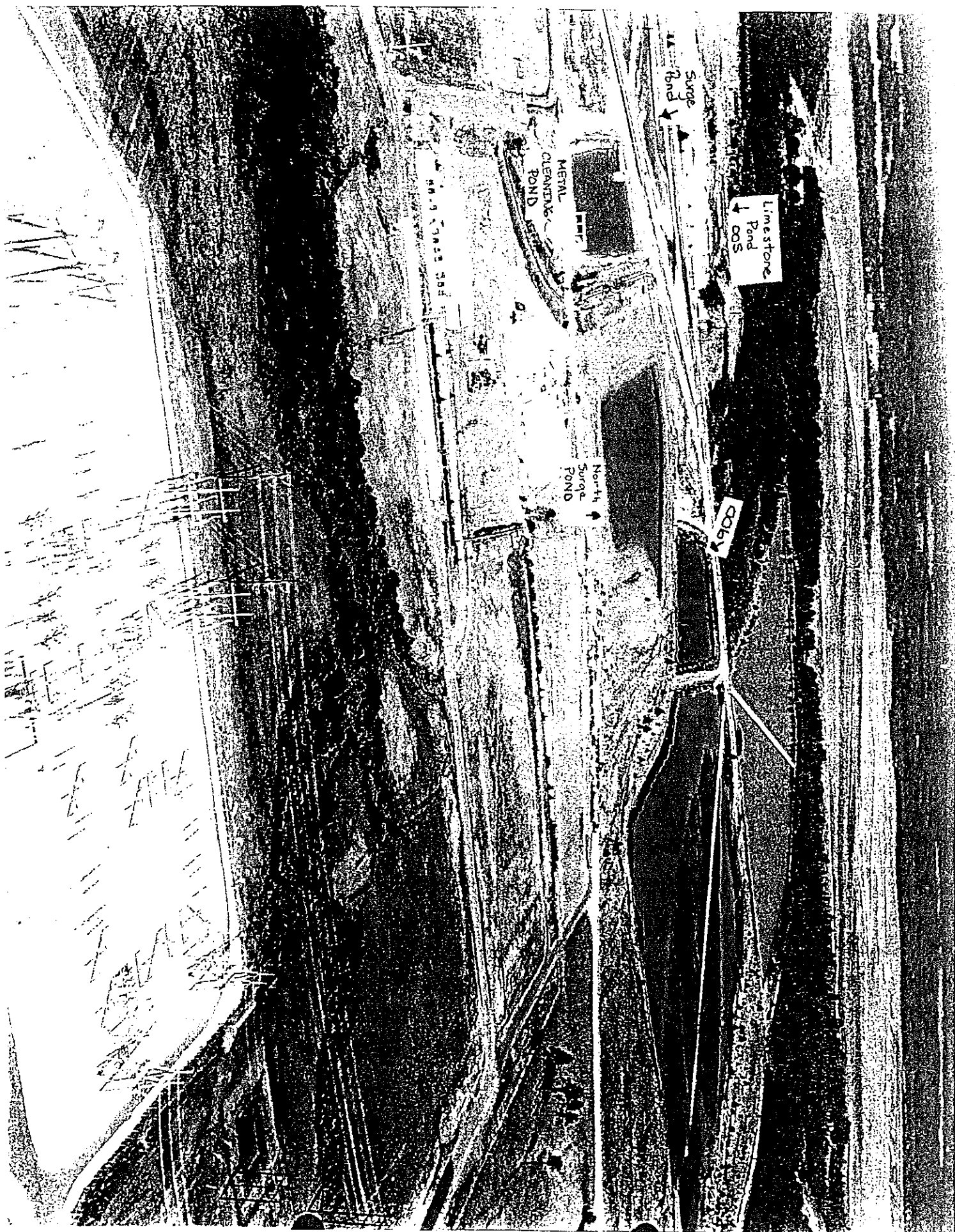
HENRY W. PIRKEY POWER PLANT



HENRY W. KIRKEY POWER PLANT



HARRY W. FLIKER POWER PLANT



TECHNICAL REPORT 1.0 - INDUSTRIAL

THE FOLLOWING IS REQUIRED FOR ALL APPLICATIONS, RENEWAL, NEW, AND AMENDMENT

1. FACILITY/SITE INFORMATION (Instructions, page 22)

a. Describe the type of activity and general nature of your business.

Steam Electric Power Generation

b. SIC Code(s) 4911 , _____ , _____ , _____

c. Describe the wastewater generating processes.

Once-through Cooling Water from condensers
Non-contact cooling water for pumps and equipment
Metal Cleaning wastes from cleaning of metal equipment (not discharged)
Domestic Sewage effluent from treatment of domestic wastewater via wastewater treatment plant.
Ash transport water from ash handling system.
Miscellaneous wastewater from plant equipment and floor drains.
Stormwater runoff from the Lignite storage area, limestone storage area, and ash landfill/flue Gas Desulphurization areas.

d. Provide a list of raw materials, major intermediates, and products handled at your facility.

Raw Materials	Intermediate Products	Final Products
Lignite	Steam	Electricity
Water		
Air		

- e. Indicate by a check mark that an attached facility map with the following information was provided with the application:

- ☒ Production areas, maintenance areas, materials handling areas, and waste disposal areas.
- ☒ The location of each unit of the wastewater treatment plant including the location of wastewater collection sumps and impoundments.

Attachment: C

- f. Is this a new permit application for an existing facility? ☐ Yes ☒ No

If yes, provide background discussion below.

- g. Is the treatment facility/disposal site located above the 100-year frequency flood level?

☒ Yes ☐ No

List source(s) used to determine 100-year frequency flood plain: National Weather Service

If no, provide the elevation of the 100-year frequency flood plain and describe what protective measures are in use or planned to be used to prevent flooding of the treatment facility/disposal area.

- h. For new or amendment permit applications, will there be discharge of fill material into a water in the state for construction of the proposed outfall structure? ☐ Yes ☒ No

If no, proceed to Item No. 2. If yes, has the applicant applied for a U.S. Corps of Engineers 404 Dredge and Fill permit? ☐ Yes ☐ No

If yes, provide the permit number: _____

If no, provide the approximate date you anticipate submitting your application to the Corps.

2. TREATMENT SYSTEM (Instructions, page 23)

- a. List any physical, chemical, and/or biological treatment process that you use for the treatment of wastewater at your facility. Include a description of each treatment process starting with initial treatment and finishing with the discharge point.

Chlorination of Once-Through Cooling Water prior to discharge via Outfall 002.
Settling and Precipitation/Flocculation of Storm Water prior to discharge via Outfall 003.
Settling and Precipitation/Flocculation of Storm Water prior to discharge via Outfall 004.
Settling and Precipitation/Flocculation of Storm Water prior to discharge via Outfall 005.
Separation, pH adjustment, settling, and Precipitation/Flocculation of bottom ash water/low volume wastes prior to discharge via Outfall 006.

pH neutralization, filtration, settling, oil/water separation of various low volume waste sources prior to discharge via Outfall 102.

pH neutralization, filtration, settling, oil/water separation, chemical wastewater treatment of any wastewater routed to "plant x" for treatment prior to discharge via Outfall 202.

pH neutralization, filtration, settling/clarifier solids separation, chlorination, and chemical wastewater treatment of domestic wastewater prior to discharge via Outfall 302.

- b. ☒ Indicate by a check mark that an attached flow schematic with a water balance was provided with the application showing each treatment unit and all sources of wastewater flow into the treatment plant and to each outfall/point of disposal. Attachment: D

3. IMPOUNDMENTS (Instructions, page 23)

Do you use or plan to use any wastewater lagoons, ponds, or impoundments? ☒ Yes ☐ No

If yes, complete item 3(a) for existing impoundments and items 3(a)-3(f) for new or proposed impoundments.

If no, proceed to Item No. 4.

- a. Provide the following information in the table provided:

Designation: Indicate the appropriate use designation for each pond [Treatment (T), Disposal (D), Containment (C), or Evaporation (E)]

Discharge Point: If a discharge occurs from the impoundments, designate the outfall associated with the impoundment.

Liner Information: If the impoundments are lined to comply with specifications outlined for 1) a compacted clay liner (C), 2) an in-situ clay liner (I), or 3) a synthetic/plastic/rubber liner (S), indicate the liner type with the appropriate letter designation (see instructions for further detail on liner specifications). If not, provide a reference to the attachment that provides a description of the alternate liner and any additional technical information necessary for an evaluation.

Dimensions: Provide the dimensions(s), freeboard, surface area, and storage volume capacity of the impoundments. For impoundments with irregular shapes, submit surface area (instead of length and width), the average depth, and the maximum depth below natural ground level.

Impoundment Information Table

	Pond # <u>1</u>	Pond # <u>2</u>	Pond # <u>3</u>	Pond # <u>4</u>	Pond # <u>5</u>
Designation					
(T) (D) (C) or (E)	T	T	T	T	T
Discharge Point					
Outfall Number	003	004	005	006	202
Liner Information					
Liner Type (C) (I) or (S)	C	C	C	C	C
Alt. Liner Attachment Reference	n/a	n/a	n/a	n/a	n/a
Dimensions					
Length (feet)	<u>500</u> ft	<u>800</u> ft	<u>400</u> ft	<u>2600</u> ft	<u>525</u> ft
Width (feet)	<u>450</u> ft	<u>700</u> ft	<u>350</u> ft	<u>1200</u> ft	<u>200</u> ft
Depth from Water Surface	<u>20</u> ft	<u>15</u> ft	<u>20</u> ft	<u>20</u> ft	<u>10</u> ft
Depth from Nat. Ground Level	<u>7ft</u> avg <u>10ft</u> max	<u>7ft</u> avg <u>10ft</u> max	<u>7ft</u> avg <u>10ft</u> max	<u>6ft</u> avg <u>10ft</u> max	<u>5ft</u> avg <u>8ft</u> max
Freeboard (feet)	<u>3</u> ft	<u>3</u> ft	<u>3</u> ft	<u>3</u> ft	<u>3</u> ft
Surface Area (acres)	<u>5.18</u> acres	<u>12.88</u> acres	<u>3.22</u> acres	<u>71.76</u> acres	<u>2.42</u> acres
Storage Capacity (gallons)	<u>9.32</u> × 10 ⁶ gal.	<u>8.15</u> × 10 ⁶ gal.	<u>2.85</u> × 10 ⁶ gal.	<u>61.26</u> × 10 ⁶ gal.	<u>3.9</u> × 10 ⁶ gal.

	Pond # ____	Pond # ____	Pond # ____	Pond # ____	Pond # ____
Designation					
(T) (D) (C) or (E)					
Discharge Point					
Outfall Number					
Liner Information					
Liner Type (C) (I) or (S)					
Alt. Liner Attachment Reference					
Dimensions					
Length (feet)	____ ft	____ ft	____ ft	____ ft	____ ft
Width (feet)	____ ft	____ ft	____ ft	____ ft	____ ft
Depth from Water Surface	____ ft	____ ft	____ ft	____ ft	____ ft
Depth from Nat. Ground Level	____ avg ____ max	____ avg ____ max	____ avg ____ max	____ avg ____ max	____ avg ____ max
Freeboard (feet)	____ ft	____ ft	____ ft	____ ft	____ ft
Surface Area (acres)	____ acres	____ acres	____ acres	____ acres	____ acres
Storage Capacity (gallons)	____ gal.	____ gal.	____ gal.	____ gal.	____ gal.

THE FOLLOWING ITEMS ARE REQUIRED ONLY FOR NEW OR PROPOSED IMPOUNDMENTS.
N/A

b. Indicate by a check mark if any of the following data was provided with the application: _____

- (1) _____ Synthetic/plastic/rubber liner data
(2) _____ In-situ clay liner data

Attachment: _____

c. Are there any leak detection systems or ground water monitoring wells in place or planned? _____ Yes _____ No

_____ If yes, indicate by a check mark that a separate attachment was provided with the leak detection system information for each pond and/or ground water monitoring well data.

Attachment: _____

d. Is the bottom of the pond above the seasonal high water table in the most shallow water bearing zone?

_____ Yes _____ No

_____ If no, indicate by a check mark that additional information was provided describing the depth of the seasonal high water table in the most shallow water bearing zone in relation to the depth of the bottom of the new or proposed impoundment and how this may or may not impact groundwater.

e. Indicate by a check mark that the following information was provided:

_____ A USGS quadrangle map or a color copy of original quality and scale which accurately locates and identifies water supply wells and/or monitor wells within ½ mile radius of the impoundments.

_____ Copies of State Water Well Reports (driller's logs, completion data), and data on depths to ground water for water supply wells including a description of how the depths to ground water were obtained.

For TLAP permit applications: _____ Indicate by a check mark that the new or proposed impoundment(s) and the land application disposal area are located in the same general area and the information for this item is provided in Worksheet 3.0 (item 8).

f. _____ Indicate by a check mark if any data was provided with the application pertaining to the ground water, soils, geology, etc. used to assess the potential for migration of wastes from the impoundments and/or the potential for contamination of ground water or surface water.

4. OUTFALL/DISPOSAL METHOD INFORMATION(Instructions, page 25)

Complete the following tables to describe the location and wastewater discharge or disposal operations for each outfall for discharge operations and for each point of disposal for TLAP operations.

For TLAP permit applications: Indicate the disposal method and each individual irrigation area (I), evaporation pond (E), or subsurface drainage system (S) by providing the appropriate letter designation for the disposal method followed by a numerical designation for each disposal area (e.g. evaporation pond, application area) in the space provided for "Outfall" designation (e.g. "E1" for evaporation pond 1, "I2" for irrigation area No. 2, etc.).

OUTFALL: 002

Latitude			Longitude			Location Description
32°	27'	30"	94°	29'	00"	End of discharge canal prior to entering Brandv Branch Reservoir
Permitted Flow (MGD)		Proposed Flow (MGD)				
Dly Avg	Dly Max	Dly Avg	Dly Max	Discharge Duration		
600	600	600	600	24 (hrs./day) 31 (days/mo.) 12 (mo./year)		
<input checked="" type="checkbox"/> Pumped <input type="checkbox"/> Gravity		Measurement Device: <u>Pump Curves</u>			<input type="checkbox"/> Intermittent <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Continuous	
Contributing Wastestreams:				Volume (MGD)	% of Total Flow	
Once-through Cooling Water				544.32	100%	

OUTFALL: 003

Latitude			Longitude			Location Description
32°	27'	30"	94°	29'	00"	Lignite Storage Runoff Pond
Permitted Flow (MGD)		Proposed Flow (MGD)				
Dly Avg	Dly Max	Dly Avg	Dly Max	Discharge Duration		
Variable	Variable	Variable	Variable	____ (hrs./day) ____ (days/mo.) ____ (mo./year)		
<input type="checkbox"/> Pumped <input checked="" type="checkbox"/> Gravity		Measurement Device: <u>Estimate</u>			<input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Seasonal <input type="checkbox"/> Continuous	
Contributing Wastestreams:				Volume (MGD)	% of Total Flow	
Stormwater from Lignite Storage area				0 - 5	100%	

OUTFALL: 004

Latitude			Longitude			Location Description		
32 °	27'	00"	94°	29'	00"	Southwest side of ash landfill.		
Permitted Flow (MGD)			Proposed Flow (MGD)					
Dly Avg	Dly Max	Dly Avg	Dly Max	Discharge Duration				
Variable	Variable	Variable	Variable	Variable (hrs./day)	Variable (days/mo.)	Variable (mo./year)		
<input type="checkbox"/> Pumped <input checked="" type="checkbox"/> Gravity			Measurement Device: <u>Estimate</u>			<input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Seasonal <input type="checkbox"/> Continuous		
Contributing Wastestreams:						Volume (MGD)		% of Total Flow
Stormwater runoff from ash landfill/flue gas						0 - 5		100%
desulphurization areas								

OUTFALL: 005

Latitude			Longitude			Location Description		
32 °	27'	30"	94°	29'	00"	West of Limestone Storage area		
Permitted Flow (MGD)			Proposed Flow (MGD)					
Dly Avg	Dly Max	Dly Avg	Dly Max	Discharge Duration				
Variable	Variable	Variable	Variable	(hrs./day)	(days/mo.)	(mo./year)		
<input type="checkbox"/> Pumped <input checked="" type="checkbox"/> Gravity			Measurement Device: <u>Estimate</u>			<input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Seasonal <input type="checkbox"/> Continuous		
Contributing Wastestreams:						Volume (MGD)		% of Total Flow
Stormwater from Limestone Storage area						0 - 5		100 %

OUTFALL: 006

Latitude			Longitude			Location Description	
32°	27'	30"	94°	29'	00"	On southwest side of ash pond system prior to discharge into unnamed tributary of Hatley Creek.	
Permitted Flow (MGD)			Proposed Flow (MGD)				
Dly Avg	Dly Max	Dly Avg	Dly Max	Discharge Duration			
Report	Report	Report	Report	24 (hrs./day) 28-31 (days/mo.) 12 (mo./year)			
<input type="checkbox"/> Pumped <input checked="" type="checkbox"/> Gravity		Measurement Device: Estimate		<input type="checkbox"/> Intermittent <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Continuous			
Contributing Wastestreams:				Volume (MGD)		% of Total Flow	
Commingled Wastewater - Ash Pond (includes Low Volume wastewater, ash pond wastewater, and storm water)				0-5		100%	

OUTFALL: 102

Latitude			Longitude			Location Description	
32°	27'	30"	94°	29'	00"	adjacent to intake structure on east side of plant prior to entering Brandy Branch Reservoir	
Permitted Flow (MGD)			Proposed Flow (MGD)				
Dly Avg	Dly Max	Dly Avg	Dly Max	Discharge Duration			
Report	Report	Report	Report	24 (hrs./day) 31 (days/mo.) 12 (mo./year)			
<input type="checkbox"/> Pumped <input checked="" type="checkbox"/> Gravity		Measurement Device: Weir		<input type="checkbox"/> Intermittent <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Continuous			
Contributing Wastestreams:				Volume (MGD)		% of Total Flow	
Low Volume Wastewater				20-25		100%	

OUTFALL: 202

Latitude			Longitude			Location Description		
32°	27'	30"	94 °	29'	00"	On east side of facility prior to discharge into Brandy Branch Reservoir.		
Permitted Flow (MGD)			Proposed Flow (MGD)					
Dly Avg	Dly Max	Dly Avg	Dly Max	Discharge Duration				
Report	Report	Report	Report	Variable (hrs./day) Variable (days/mo.) Variable (mo./year)				
<input checked="" type="checkbox"/> Pumped <input type="checkbox"/> Gravity			Measurement Device: Estimate			<input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Seasonal <input type="checkbox"/> Continuous		
Contributing Wastestreams:						Volume (MGD)		% of Total Flow
Plant "X" Treated Effluent (currently not operating)						Variable		100%

OUTFALL: 302

Latitude			Longitude			Location Description		
32°	27'	30"	94°	29'	00"	On east side of facility adjacent to intake structure.		
Permitted Flow (MGD)			Proposed Flow (MGD)					
Dly Avg	Dly Max	Dly Avg	Dly Max	Discharge Duration				
0.015	0.030	0.015	0.030	24 (hrs./day) 31 (days/mo.) 12 (mo./year)				
<input type="checkbox"/> Pumped <input checked="" type="checkbox"/> Gravity			Measurement Device: Weir			<input type="checkbox"/> Intermittent <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Continuous		
Contributing Wastestreams:						Volume (MGD)		% of Total Flow
Treated Sanitary Sewage Effluent						0.030		100%

5. BLOWDOWN AND ONCE-THROUGH COOLING WATER DISCHARGES(Instructions, page 26)

- a. Does your facility use any cooling towers or boilers that discharge blowdown or other wastestreams to the outfall(s)? ☒ Yes ☐ No
- b. Does your facility discharge once-through cooling water to the outfall(s)? ☒ Yes ☐ No
- c. If yes to either item a or b, indicate with a check mark that the appropriate MSDS with the following information for each chemical additive was submitted with the application.

- ☒ Manufacturers Product Identification Number.
- ☒ Product use. (e.g., biocide, fungicide, corrosion inhibitor, etc.)
- ☒ Chemical Composition including Chemical Abstracts System (CAS) number for each ingredient.
- ☒ Classify product as non-persistent, persistent, or bioaccumulative.
- ☒ Product or active ingredient half-life.
- ☒ Frequency of product use (e.g., 2 hr/day once every two weeks).
- ☒ Product toxicity data specific to fish and aquatic invertebrate organisms.
- ☐ Concentration of whole product in wastestream (if above item is for whole product)
- ☐ Concentration of active ingredient in wastestream (if above item is for active ingredient)

Please provide a summary of this information in addition to the submittal of the MSDS for each specific wastestream and the associated chemical additives and specify which outfalls are affected.

Attachment: E

d. Cooling Towers and Boilers

	Number of Units	Daily Avg. Blowdown	Daily Max Blowdown
Cooling Towers	<u>0</u> cooling towers	Daily Avg: <u>na</u> gallons/day	Daily Max: <u>na</u> gallons/day
Boilers	<u>1</u> boilers	Daily Avg: <u>na</u> gallons/day	Daily Max: <u>9600</u> gallons/day

6. STORM WATER MANAGEMENT(Instructions, page 26)

Are there any existing or proposed outfalls which discharge storm water runoff commingled with other wastestreams? ☒ Yes ☐ No. If yes, provide the following information. If no, proceed to Item No. 7.

- a. Provide a brief narrative description of the industrial processes and activities that occur outdoors or in some manner that may result in exposure of the materials to precipitation or runoff in areas where runoff is generated.

The ash ponds are exposed to storm water and receive some storm water runoff. These ponds are used for settling of solids from the ash handling system prior to discharge. The combined wastewaters in the ash pond system are discharged via Outfall 006.

7. DOMESTIC SEWAGE, SEWAGE SLUDGE, AND/OR SEPTAGE MANAGEMENT AND DISPOSAL
(Instructions, page 27)

- a. Please check the appropriate method(s) of domestic sewage and domestic sewage sludge treatment/disposal and complete Attachment F if directed.

☐ Domestic sewage is not generated on-site. **PROCEED TO ITEM NO. 8.**

☐ Both domestic and industrial treatment sludge **ARE commingled** prior to use or disposal. **PROCEED TO ITEM NO. 8.**

☐ Industrial wastewater and domestic sewage are treated separately and the respective sludge **IS NOT commingled** prior to sludge use or disposal. **COMPLETE WORKSHEET 5.0 OF THIS APPLICATION.**

☐ If your facility is a POTW, **COMPLETE WORKSHEET 5.0 OF THIS APPLICATION.**

☒ Facility is connected to a wastewater treatment plant permitted to receive domestic sewage, or the domestic sewage is transported off-site to a permitted facility for treatment and/or disposal. **COMPLETE ITEM NO. 7.B.**

☐ Domestic sewage is disposed of by an on-site septic tank. **COMPLETE ITEM 7.B.**

☐ Other. Please provide a detailed description below.

- b. Provide the name and TNRCC, NPDES, and/or TPDES Permit No. of the waste disposal facility which receives the domestic sewage/septage. If hauled by motorized vehicle, provide the name and TNRCC Registration No. of the hauler.

Plant/Hauler Name	Permit/Registration No.
Plant: City of Lone Star POTW	12411-01
Transporter: Allwaste Environmental Services, Inc.	002 (TDH #20124)

8. IMPROVEMENTS OR COMPLIANCE/ENFORCEMENT REQUIREMENTS(Instructions, page 27)

Is the permittee currently required to meet any implementation schedule for compliance or enforcement?

☐ Yes ☒ No

If yes, provide a brief summary of the requirements and a status update.

--

9. TOXICITY TESTING (Instructions, page 27)

Have any biological tests for acute or chronic toxicity been made on any of your discharges or on a receiving water in relation to your discharge within the last three (3) years?

☒ Yes ☐ No

If yes, identify the tests and describe their purposes below. Please attach a copy of all tests performed that have not been previously sent to the TNRCC and/or EPA.

Chronic toxicity testing is required in the wastewater permit at Outfall 002.
Acute toxicity testing is required in the wastewater permit at Outfalls 002, 102, and 006.
The purpose of the testing is to ensure protection of aquatic life in the receiving waters (Brandy Branch Reservoir and the unnamed tributary of Hatley Creek).

10. OFF-SITE/THIRD PARTY WASTES (Instructions, page 28)

Do you receive wastes from off-site sources for treatment in your facility, disposal on-site via land application, and/or discharge via a permitted outfall? ☐ Yes ☒ No

If no, proceed to Item No. 11. If yes, proceed as directed.

- a. Indicate with a check mark that a detailed attachment with the following information was provided with the application: **Attachment:** _____

<input type="checkbox"/> List of wastes received	<input type="checkbox"/> Identified sources of wastes received
<input type="checkbox"/> Characterization of wastes received	<input type="checkbox"/> Name and addresses of generators
<input type="checkbox"/> Volumes of each waste received	<input type="checkbox"/> Description of the relationship of waste
<input type="checkbox"/> Info. on compatibility with on-site wastes	<input type="checkbox"/> source(s) with your facility's activities.

- b. Is wastewater from a TNRCC, NPDES, and/or TPDES permitted facility commingled with your wastewater after your final treatment and prior to discharge via your final outfall/point of disposal? ☐ Yes ☐ No

If yes, provide the name, address, and TNRCC, NPDES, and/or TPDES permit number of the contributing facility and a copy of any agreements and/or contracts relating to this activity.

- c. Is your facility a Publicly Owned Treatment Works (POTW) that accepts process wastewater from any Significant Industrial User (SIU) and has or is required to have an approved pretreatment program under the NPDES/TPDES program? ☐ Yes ☐ No If yes, complete **Worksheet 6.0** of this application.

11. RADIOACTIVE MATERIALS (Instructions, page 28)

Are radioactive materials mined, used, stored, or processed at this facility? ☐ Yes ☒ No

If yes, Provide a list of the materials and the results of one analysis of your effluent in picocuries per liter (pCi/L) for all radioactive parameters which may be present.

Radioactive Materials	Conc. (pCi/L)

THE FOLLOWING ITEMS ARE ONLY REQUIRED FOR EXISTING PERMITTED FACILITIES.

12. MAJOR AMENDMENT REQUESTS (Instructions, page 28)

Are you requesting a major amendment of an existing permit? ☒ Yes ☐ No

If yes, list each specific request and provide discussion on the scope of any requested permit changes.

See Attachment F

If necessary, provide supplemental information or additional data that will support the request.

13. MINOR MODIFICATION REQUESTS (Instructions, page 29)

Are you requesting any minor modifications to the permit? ☐ Yes ☒ No **Note:** see the instructions for an exclusive list of changes considered as minor modifications.

If yes, list and discuss the requested changes.

14. MINOR AMENDMENT REQUESTS (Instructions, page 29)

Are you requesting any minor amendments to the permit? ☐ Yes ☒ No

If yes, list and discuss the requested changes.

**WORKSHEETS
TO THE INDUSTRIAL WASTEWATER PERMIT APPLICATION TECHNICAL REPORT**

Please review the worksheet requirements in the instructions and indicate by checking either yes or no which worksheets are required, completed, and submitted with the technical report. Worksheets that are not applicable do not need to be submitted with the technical report.

WORKSHEET	COMPLETED AND SUBMITTED WITH THE TECHNICAL REPORT:	
	YES	NO
1.0: EPA EFFLUENT CATEGORICAL GUIDELINES	✓	
2.0: POLLUTANT ANALYSES REQUIREMENTS	✓	
3.0: LAND DISPOSAL OF EFFLUENT		✓
4.0: RECEIVING WATERS	✓	
4.1: STREAM PHYSICAL CHARACTERISTICS WORKSHEET		✓
5.0: SEWAGE SLUDGE MANAGEMENT AND DISPOSAL		✓
6.0: INDUSTRIAL WASTE CONTRIBUTION		✓
7.0: STORM WATER RUNOFF	✓	
8.0: AQUACULTURE (Reserved)	N/A	N/A
9.0: CLASS V INJECTION WELL		✓

WORKSHEET 1.0 - EPA EFFLUENT CATEGORICAL GUIDELINES

**REQUIRED FOR ALL APPLICATIONS FOR TPDES PERMITS FOR DISCHARGES OF WASTEWATERS
SUBJECT TO EPA EFFLUENT LIMITATION GUIDELINES.**

1. CATEGORICAL INDUSTRIES (Instructions, page 31)

Is your facility subject to any of the 40 CFR effluent guidelines outlined in Table 1? ☒ Yes ☐ No

If yes, provide the appropriate information in the table below. If no, this worksheet is not required.

Industry	CFR
Steam Electric Power Generating	423

2. PRODUCTION/PROCESS DATA (Instructions, page 32)

n/a

- a. **Production data:** Provide the appropriate data for effluent guidelines with production based effluent limitations.

Subcategory	Actual Quantity/Day	Design Quantity/Day	Units

- b. **Organic Chemicals, Plastics, and Synthetic Fibers Manufacturing Data (40 CFR Part 414):** Provide each appropriate subpart and the percent of total production. Also provide the appropriate data for metal bearing wastestreams as required in 40 CFR Part 414, Appendices A and B.

Subcategory	% of total production	Appendix A and B	
		Metal	Process

- c. **Refineries (40 CFR Part 419):** Provide the applicable subcategory and a brief justification for each.
n/a

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3. **PROCESS/NON-PROCESS WASTEWATER FLOWS:** Provide a breakdown of process wastewater flow(s) and non-process wastewater flow(s) as directed. (Instructions, page 32)

See Item #4 below

4. **NEW SOURCE DETERMINATION:** Provide a list of wastewater generating processes subject to effluent guidelines and the appropriate information. (Instructions, page 32)

Process	EPA Guideline		Date Process/Construction Commenced
	Part	Subpart	
Once-through Cooling Water	40 CFR	423	1985
Low Volume Wastes/Ash Transport Water/	40 CFR	423	1985
Storm water (combined)			
Metal / Chemical Metal Cleaning Wastes	40 CFR	423	1985
Treated Sanitary Sewage Effluent			1985

WORKSHEET 2.0 - POLLUTANT ANALYSES REQUIREMENTS

REQUIRED FOR APPLICATIONS SUBMITTED FOR A TPDES PERMIT. NOT REQUIRED FOR APPLICATIONS FOR A PERMIT TO DISPOSE OF ALL WASTEWATER BY LAND DISPOSAL OR FOR DISCHARGES SOLELY OF STORM WATER RUNOFF. (General Requirements: Instructions, Page 33)

1. TABLE 1: Complete table required for all external outfalls. (Instructions, Page 34)

Outfall No.: 002	<input checked="" type="checkbox"/> C <input type="checkbox"/> G	Effluent Concentration (mg/l)				
Pollutants	Samp. 1	Samp. 2	Samp. 3	Samp. 4	Average	
BOD (5-day)	3	2	<2	<2	<2	
CBOD (5-day)	6	<2	<2	<2	<3	
Chemical Oxygen Demand	18	34	22	12	22	
Total Organic Carbon	9.2	10.7	17.1	7.8	11.2	
Ammonia Nitrogen	<1	<1	<1	<1	<1	
Total Suspended Solids	<1	<1	1	5	<2	
Nitrate Nitrogen	0.1	<0.1	<0.1	<0.1	<0.1	
Total Organic Nitrogen	1	1	<1	<1	<1	
Total Phosphorus	<0.1	<0.1	<0.1	<0.1	<0.1	
Oil and Grease	<5	<5	<5	<5	<5	
Total Residual Chlorine	0.2	0.2	0.2	0.16	0.2	
Total Dissolved Solids	150	116	128	576	243	
Sulfate	24	27	25	333	102	
Chloride	24	29	27	33	28	
Fluoride	100	200	200	400	225	
Fecal Coliform	<1	0	2	0	<1	
Temperature(°F)	84	83	81	96	86	
pH (Standard Units; min/max)*	n/a	n/a	8.1	8.1	n/a	
*outfall 002 is exempt from pH requirements	Effluent Concentration (µg/l)					MAL (µg/l)
Total Aluminum	<30	66	<30	<30	<39	30
Total Antimony	<10	<10	<10	<10	<10	30
Total Arsenic	<1	<5	<5	<5	<4	10
Total Barium	104	109	110	105	107	10
Total Beryllium	<5	<5	<5	<5	<5	5
Total Cadmium	<1	<1	<1	<1	<1	1
Total Chromium	<10	<10	<10	<10	<10	10
Trivalent Chromium	<10	<5	<5	<5	<6	N/A
Hexavalent Chromium	<5	<5	<5	<5	<5	10
Total Copper	<10	<10	<10	<10	<10	10
Cyanide	<20	<20	<20	<20	<20	20
Total Lead	<1	<5	<5	<5	<4	5
Total Mercury	<0.2	<0.2	<0.2	<0.2	<0.2	0.2
Total Nickel	<10	<10	<10	<10	<10	10
Total Selenium	<1	<5	<5	7	<5	10
Total Silver	<2	<2	<2	<2	<2	2.0
Total Thallium	<1	<5	<5	<5	<4	10
Total Zinc	<5	<5	<5	8	<6	5

2. **TABLE 2:** Complete table required for all external outfalls which discharge process wastewater. Partial table required for all external outfalls with nonprocess wastewater discharges. Storm water runoff discharges commingled with other wastestreams shall complete the table as instructed (Instructions, Page 34).

Outfall No.: 002	<input checked="" type="checkbox"/> C <input type="checkbox"/> G	Effluent Concentration (µg/l) (*1)					
Pollutants		Samp. 1	Samp. 2	Samp. 3	Samp. 4	Average	MAL (µg/l)
Benzene		<10	<10	<10	<10	<10	10
Benzidine		<50	<50	<50	<50	<50	50
Benzo(a)anthracene		<10	<10	<10	<10	<10	10
Benzo(a)pyrene		<10	<10	<10	<10	<10	10
Carbon Tetrachloride		<10	<10	<10	<10	<10	10
Chlorobenzene		<10	<10	<10	<10	<10	10
Chloroform		<10	<10	<10	<10	<10	10
Chrysene		<10	<10	<10	<10	<10	10
Cresols		<50	<50	<50	<50	<50	(*2)
Dibromochloromethane		<10	<10	<10	<10	<10	10
1,2-Dibromoethane		<2	<2	<2	<2	<2	2
1,4-Dichlorobenzene		<10	<10	<10	<10	<10	10
1,2-Dichloroethane		<10	<10	<10	<10	<10	10
1,1-Dichloroethylene		<10	<10	<10	<10	<10	10
Fluoride		100	200	200	400	225	500
Hexachlorobenzene		<10	<10	<10	<10	<10	10
Hexachlorobutadiene		<10	<10	<10	<10	<10	10
Hexachloroethane		<20	<20	<20	<20	<20	20
Methyl Ethyl Ketone		<50	<50	<50	<50	<50	50
Nitrobenzene		<10	<10	<10	<10	<10	10
n-Nitrosodiethylamine		<20	<20	<20	<20	<20	20
n-Nitroso-di-n-Butylamine		<20	<20	<20	<20	<20	20
PCB's, Total (*3)		<1	<1	<1	<1	<1	1
Pentachlorobenzene		<20	<20	<20	<20	<20	20
Pentachlorophenol		<50	<50	<50	<50	<50	50
Phenanthrene		<10	<10	<10	<10	<10	10
Pyridine		<20	<20	<20	<20	<20	20
1,2,4,5-Tetrachlorobenzene		<20	<20	<20	<20	<20	20
Tetrachloroethylene		<10	<10	<10	<10	<10	10
Trichloroethylene		<10	<10	<10	<20	<10	10
1,1,1-Trichloroethane		<10	<10	<10	<10	<10	10
2,4,5-Trichlorophenol		<50	<50	<50	<50	<50	50
TTHM (Total Trihalomethanes)		<10	<10	<10	<10	<10	10
Vinyl Chloride		<10	<10	<10	<10	<10	10

(*1) Indicate units if different from µg/l.

(*2) MAL's for Cresols: p-Chloro-m-Cresol 10 µg/l; 4,6-Dinitro-o-Cresol 50 µg/l; p-Cresol 10 µg/l

(*3) Total of PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, PCB-1016.

3. **TABLE 3:** Partial table (only those pollutants which are required by the conditions specified) required for each external outfall. Not required for internal outfalls. (Instructions, Page 34)

a. **TRIBUTYLTIN:**

Is your facility or will your proposed facility be an industrial/commercial facilities which directly disposes of wastewater from the types of operations listed below or a domestic facilities which receive wastewater from the types of industrial/commercial operations listed below? ____ Yes ☒ No

If yes, indicate with a check mark all of the following criteria which apply and provide the appropriate testing results in the table below.

- ____ Manufacturers and formulators of tributyltin or related compounds.
 ____ Painting of ships, boats and marine structures.
 ____ Ship and boat building and repairing.
 ____ Ship and boat cleaning, salvage, wrecking and scaling.
 ____ Operation and maintenance of marine cargo handling facilities and marinas
 ____ Facilities engaged in wood preserving
 ____ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. **ENTEROCOCCI**

Does your facility or will your proposed facility discharge directly into saltwater receiving waters?
 ____ Yes ☒ No

If yes, provide the appropriate testing results in the table below.

TABLE 3

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Effluent Concentration ($\mu\text{g/l}$)					
Pollutants		Samp. 1	Samp. 2	Samp. 3	Samp. 4	Average	MAL ($\mu\text{g/l}$)
Tributyltin							0.010
Enterococci							N/A

4. **TABLE 4:** Complete table required for all external outfalls which discharge process wastewater and other wastewaters, which may contain pesticides or herbicides, from a facility which manufactures or formulates pesticides or herbicides. Not required for internal outfalls. (Instructions, Page 35)

Does your facility manufacture or formulate pesticides or herbicides? Yes ✓ No
If yes, provide the appropriate testing results.

TABLE 4

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Effluent Concentration ($\mu\text{g/l}$) (*1)					MAL ($\mu\text{g/l}$)
Pollutants		Samp. 1	Samp. 2	Samp. 3	Samp. 4	Avg.	
Beta-hexachlorocyclohexane							0.05
Carbaryl							5
Chlordane							0.15
Chlorpyrifos							0.05
2,4-D							10
Danitol							----
4,4'-DDD							0.1
4,4'-DDE							0.1
4,4'-DDT							0.1
Demeton							0.2
Diazinon							0.5
Dicofol							20
Dieldrin							0.1
Diuron							----
Endosulfan I (alpha)							0.1
Endosulfan II (beta)							0.1
Endosulfan Sulfate							0.1
Endrin							0.1
Gamma - Hexachlorocyclohexane (Lindane)							0.05
Guthion							0.10
Heptachlor							0.05
Heptachlor Epoxide							1.0
Hexachlorophene							10
Malathion							0.10
Methoxychlor							2.0
Mirex							0.2
Parathion							0.1
Toxaphene							5
2,4,5-TP (Silvex)							2

* Indicate units if different from mg/L.

5. **TABLE 5:** Complete table required for all external outfalls. Not required for internal outfalls.
(Instructions, Page 35)

TABLE 5

Outfall No.: 002	<input checked="" type="checkbox"/> C <input type="checkbox"/> G	Believed Present	Believed Absent	Effluent Concentration (mg/l)		
Pollutants				Average	Maximum	No. of Samples
Bromide			X	0.2	0.3	4
Color(PCU)		X		7 pt. co.	9 pt. co.	4
Nitrate-Nitrite(as N)			X	<0.1	<0.1	4
Sulfide(as S)			X	<0.002	0.002	4
Sulfite(as SO ₃)			X	<2	<2	4
Surfactants			X	n/a	n/a	n/a
Total Antimony			X	<10 ug/l	<10 ug/l	4
Total Beryllium			X	<5 ug/l	<5 ug/l	4
Total Boron			X	109 ug/l	115 ug/l	4
Total Cobalt			X	<10 ug/l	<10 ug/l	4
Total Iron		X		76 ug/l	100 ug/l	4
Total Magnesium		X		7037 ug/l	8669 ug/l	4
Total Molybdenum			X	<10 ug/l	<10 ug/l	4
Total Manganese		X		35 ug/l	50 ug/l	4
Total Thallium			X	<4 ug/l	<5 ug/l	4
Total Tin			X	<50 ug/l	<50 ug/l	4
Total Titanium			X	<10 ug/l	<10 ug/l	4

6. **TABLE 6:** Indicate with a check mark any of the industrial categories applicable to your facility. If testing is required, indicate with a check mark in the box provided that the testing results for the appropriate parameters in Table B-7 are provided with the application. (Instructions, Page 35)

N/A	GC/MS Testing Required			
	Volatile	Acid	Base/Neutral	Pesticides
___ Adhesives and Sealants	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Aluminum Forming	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Auto and Other Laundries	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
___ Battery Manufacturing	Yes <input type="checkbox"/>	No	Yes <input type="checkbox"/>	No
___ Coal Mining	No	No	No	No
___ Coil Coating	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Copper Forming	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Electric and Electronic Components	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
___ Electroplating	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Explosives Manufacturing	No <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Foundries	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Gum and Wood Chemicals				
___ Subparts A,B,C,E	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No	No
___ Subparts D,F	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Inorganic Chemicals	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Iron and Steel Manufacturing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Leather Tanning/Finishing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Mechanical Products Manufacturing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Nonferrous Metals Mfg.	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
___ Ore Mining(Subpart B)	No	Yes <input type="checkbox"/>	No	No
___ Organic Chemicals, Plastics, and Synthetic Fibers	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
___ Paint and Ink Formulation	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Pesticides	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
___ Petroleum Refining	Yes <input type="checkbox"/>	No	No	No
___ Pharmaceutical Preparations	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Photographic Equipment and Supplies	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Plastic and Synthetic Materials Manufacturing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
___ Plastic Processing	Yes <input type="checkbox"/>	No	No	No
___ Porcelain Enameling	No	No	No	No
___ Printing and Publishing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
___ Pulp and Paperboard Mills				
___ Subparts A	* <input type="checkbox"/>	Yes <input type="checkbox"/>	* <input type="checkbox"/>	Yes <input type="checkbox"/>
___ Subparts B,C,D,R	* <input type="checkbox"/>	Yes <input type="checkbox"/>	* <input type="checkbox"/>	* <input type="checkbox"/>
___ Subparts F,G,H,I,K,L,M,N,O,P	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	* <input type="checkbox"/>	* <input type="checkbox"/>
___ Subparts E,Q,S,T	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	* <input type="checkbox"/>	Yes <input type="checkbox"/>
___ Subparts J,U	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	* <input type="checkbox"/>
___ Rubber Processing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Soap and Detergent Manufacturing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
✓ ___ Steam Electric Power Plants	Yes <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No	No
___ Textile Mills (Not Subpart C)	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
___ Timber Products Processing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>

* Test if "believed present"

7. **TABLE 7:** Please complete as directed and only for those parameters specified in Table 6. Required for all external outfalls which contain process wastewater. Not required for internal outfalls. Testing may be required for types of industry not specified in Table 6 for specific parameters if believed present (Instructions, Page 36).

____ N/A

TABLE 7

Outfall No.: 002	<input checked="" type="checkbox"/> C <input type="checkbox"/> G	Effluent Concentration ($\mu\text{g/l}$) *		
Pollutants		Average	Maximum	No. of Samples MAL ($\mu\text{g/l}$)
VOLATILE COMPOUNDS				
Acrolein		<50	<50	4 50
Acrylonitrile		<50	<50	4 50
Benzene		<10	<10	4 10
Bromoform		<10	<10	4 10
Carbon Tetrachloride		<10	<10	4 10
Chlorobenzene		<10	<10	4 10
Chlorodibromomethane		<10	<10	4 10
Chloroethane		<50	<50	4 50
2-Chloroethylvinyl Ether		<10	<10	4 10
Chloroform		<10	<10	4 10
Dichlorobromomethane		<10	<10	4 10
1,1-Dichloroethane		<10	<10	4 10
1,2-Dichloroethane		<10	<10	4 10
1,1-Dichloroethylene		<10	<10	4 10
1,2-Dichloropropane		<10	<10	4 10
1,3-Dichloropropylene		<10	<10	4 10
Ethylbenzene		<10	<10	4 10
Methyl Bromide		<20	<20	4 20
Methyl Chloride		<50	<50	4 50
Methylene Chloride		<20	<20	4 20
1,1,2,2-Tetrachloroethane		<10	<10	4 10
Tetrachloroethylene		<10	<50	4 50
Toluene		<10	<10	4 10
1,2-Trans-Dichloroethylene		<10	<10	4 10
1,1,1-Trichloroethane		<10	<10	4 10
1,1,2-Trichloroethane		<10	<10	4 10
Trichloroethylene		<10	<10	4 10
Vinyl Chloride		<10	<10	4 10

	Effluent Concentration (µg/l) *			
Pollutants	Average	Maximum	No. of Samples	MAL (µg/l)
ACID COMPOUNDS				
2-Chlorophenol	<10	<10	4	10
2,4-Dichlorophenol	<10	<10	4	10
2,4-Dimethylphenol	<10	<10	4	10
4,6-Dinitro-o-Cresol	<50	<50	4	50
2,4-Dinitrophenol	<50	<50	4	50
2-Nitrophenol	<20	<20	4	20
4-Nitrophenol	<50	<50	4	50
P-Chloro-m-Cresol	<10	<10	4	10
Pentachlorophenol	<50	<50	4	50
Phenol	<10	<10	4	10
2,4,6-Trichlorophenol	<10	<10	4	10
BASE/NEUTRAL COMPOUNDS n/a				
Acenaphthene				10
Acenaphthylene				10
Anthracene				10
Benzidine				50
Benzo(a)Anthracene				10
Benzo(a)Pyrene				10
3,4-Benzofluoranthene				10
Benzo(ghi)Perylene				20
Benzo(k)Fluoranthene				10
Bis(2-Chloroethoxy)Methane				10
Bis(2-Chloroethyl)Ether				10
Bis(2-Chloroisopropyl)Ether				10
Bis(2-Ethylhexyl)Phthalate				10
4-Bromophenyl Phenyl Ether				10
Chrysene				10
Dibenzo(a,h)Anthracene				20
1,2-Dichlorobenzene				10
1,3-Dichlorobenzene				10
1,4-Dichlorobenzene				10
3,3-Dichlorobenzidine				50
Diethyl Phthalate				10
Dimethyl Phthalate				10
Di-n-Butyl Phthalate				10
2,4-Dinitrotoluene				10

Pollutants	Effluent Concentration ($\mu\text{g/l}$) *		No. of Samples	MAL ($\mu\text{g/l}$)
	Average	Maximum		
BASE/NEUTRAL COMPOUNDS (cont.) n/a				
2,6-Dinitrotoluene				10
Di-n-Octyl Phthalate				10
1,2-Diphenyl Hydrazine (as Azobenzene)				20
Fluoranthene				10
Fluorene				10
Hexachlorobenzene				10
Hexachlorobutadiene				10
Hexachlorocyclopentadiene				10
Hexachloroethane				20
Indeno(1,2,3-cd)pyrene				20
Isophorone				10
Naphthalene				10
Nitrobenzene				10
N-Nitrosodimethylamine				50
N-Nitrosodi-n-Propylamine				20
N-Nitrosodiphenylamine				20
Phenanthrene				10
Pyrene				10
1,2,4-Trichlorobenzene				10
PESTICIDES n/a				
Aldrin				0.05
alpha-BHC				0.05
beta-BHC				0.05
gamma-BHC				0.05
delta-BHC				0.05
Chlordane				0.15
4,4,-DDT				0.1
4,4,-DDE				0.1
4,4,-DDD				0.1
Dieldrin				0.1
alpha-Endosulfan				0.1
beta-Endosulfan				0.1
Endosulfan Sulfate				0.1
Endrin				0.1
Endrin Aldehyde				0.1
Heptachlor				0.05

Pollutants	Effluent Concentration ($\mu\text{g/l}$)		No. of Samples	MAL ($\mu\text{g/l}$)
	Average	Maximum		
PESTICIDES (cont.) n/a				
PCB-1254				1.0
PCB-1221				1.0
PCB-1232				1.0
PCB-1248				1.0
PCB-1260				1.0
PCB-1016				1.0
Toxaphene				5.0

* Indicate units if different from $\mu\text{g/l}$

WORKSHEET 2.0 - POLLUTANT ANALYSES REQUIREMENTS

REQUIRED FOR APPLICATIONS SUBMITTED FOR A TPDES PERMIT. NOT REQUIRED FOR APPLICATIONS FOR A PERMIT TO DISPOSE OF ALL WASTEWATER BY LAND DISPOSAL OR FOR DISCHARGES SOLELY OF STORM WATER RUNOFF. (General Requirements: Instructions, Page 33)

1. TABLE 1: Complete table required for all external outfalls. (Instructions, Page 34)

Outfall No.: 006	<input checked="" type="checkbox"/> C <input type="checkbox"/> G	Effluent Concentration (mg/l)				
Pollutants	Samp. 1	Samp. 2	Samp. 3	Samp. 4	Average	
BOD (5-day)	3	<2	<2	<2	<2	
CBOD (5-day)	5	<2	<2	<2	<3	
Chemical Oxygen Demand	12	17	7	23	15	
Total Organic Carbon	4.1	8.4	8.0	10.3	7.7	
Ammonia Nitrogen	<1	<1	<1	<1	<1	
Total Suspended Solids	9	7	7	7	8	
Nitrate Nitrogen	0.2	0.2	<0.1	<0.1	<0.2	
Total Organic Nitrogen	<1	1	<1	1	<1	
Total Phosphorus	<0.1	<0.1	0.1	<0.1	<0.1	
Oil and Grease	<5	<5	<5	<5	<5	
Total Residual Chlorine	<0.1	<0.1	<0.1	<0.1	<0.1	
Total Dissolved Solids	370	298	534	182	346	
Sulfate	308	170	304	26	202	
Chloride	26	27	33	28	29	
Fluoride	0.1	0.2	0.3	0.2	0.2	
Fecal Coliform	7 col/ml	9 col/ml	6 col/ml	21 col/ml	11 col/ml	
Temperature(°F) *	n/a	n/a	n/a	n/a	n/a	
pH (Standard Units; min/max)	7.1, 7.4	7.0, 8.6	6.5, 7.5	8.2, 8.4	n/a	
*Temperature limits not applicable at this outfall		Effluent Concentration (µg/l)				
		354	348	470	380	388
Total Aluminum		354	348	470	380	388
Total Antimony		<10	<10	<10	<10	<10
Total Arsenic		3	<5	8	<5	<5
Total Barium		268	199	197	209	218
Total Beryllium		<5	<5	<5	<5	<5
Total Cadmium		<1	<1	<1	<1	<1
Total Chromium		<10	<10	<10	<10	<10
Trivalent Chromium		<10	<5	<5	<5	<6
Hexavalent Chromium		<5	<5	<5	<5	<5
Total Copper		<10	10	<10	<10	<10
Cyanide		<20	<20	<20	<20	<20
Total Lead		<1	<5	<5	<5	<4
Total Mercury		<0.2	<0.2	<0.2	<0.2	<0.2
Total Nickel		15	19	16	26	19
Total Selenium		<5	<5	<5	8	<6
Total Silver		<2	<2	<2	<2	<2
Total Thallium		<1	<5	<5	<5	<4
Total Zinc		<5	13	<5	<5	<7
		MAL (µg/l)				
		30				
		30				
		10				
		10				
		5				
		1				
		10				
		N/A				
		10				
		10				
		20				
		5				
		0.2				
		10				
		10				
		2.0				
		10				
		5				

2. **TABLE 2:** Complete table required for all external outfalls which discharge process wastewater. Partial table required for all external outfalls with nonprocess wastewater discharges. Storm water runoff discharges commingled with other wastestreams shall complete the table as instructed (Instructions, Page 34).

Outfall No.: 006	<input checked="" type="checkbox"/> C <input type="checkbox"/> G	Effluent Concentration ($\mu\text{g/l}$) (*1)					
Pollutants		Samp. 1	Samp. 2	Samp. 3	Samp. 4	Average	MAL ($\mu\text{g/l}$)
Benzene		<10	<10	<10	<10	<10	10
Benzidine		<50	<50	<50	<50	<50	50
Benzo(a)anthracene		<10	<10	<10	<10	<10	10
Benzo(a)pyrene		<10	<10	<10	<10	<10	10
Carbon Tetrachloride		<10	<10	<10	<10	<10	10
Chlorobenzene		<10	<10	<10	<10	<10	10
Chloroform		<10	<10	<10	<10	<10	10
Chrysene		<10	<10	<10	<10	<10	10
Cresols		<50	<50	<50	<50	<50	(*2)
Dibromochloromethane		<10	<10	<10	<10	<10	10
1,2-Dibromoethane		<2	<2	<2	<2	<2	2
1,4-Dichlorobenzene		<10	<10	<10	<10	<10	10
1,2-Dichloroethane		<10	<10	<10	<10	<10	10
1,1-Dichloroethylene		<10	<10	<10	<10	<10	10
Fluoride		100	200	300	200	200	500
Hexachlorobenzene		<10	<10	<10	<10	<10	10
Hexachlorobutadiene		<10	<10	<10	<10	<10	10
Hexachloroethane		<20	<20	<20	<20	<20	20
Methyl Ethyl Ketone		<50	<50	<50	<50	<50	50
Nitrobenzene		<10	<10	<10	<10	<10	10
n-Nitrosodiethylamine		<20	<20	<20	<20	<20	20
n-Nitroso-di-n-Butylamine		<20	<20	<20	<20	<20	20
PCB's, Total (*3)		<1	<1	<1	<1	<1	1
Pentachlorobenzene		<20	<20	<20	<10	<20	20
Pentachlorophenol		<50	<50	<50	<50	<50	50
Phenanthrene		<10	<10	<10	<10	<10	10
Pyridine		<20	<20	<20	<20	<20	20
1,2,4,5-Tetrachlorobenzene		<20	<20	<20	<20	<20	20
Tetrachloroethylene		<10	<10	<10	<10	<10	10
Trichloroethylene		<10	<10	<10	<10	<10	10
1,1,1-Trichloroethane		<10	<10	<10	<10	<10	10
2,4,5-Trichlorophenol		<50	<50	<50	<50	<50	50
TTHM (Total Trihalomethanes)		<10	<10	<10	<10	<10	10
Vinyl Chloride		<10	<10	<10	<10	<10	10

(*1) Indicate units if different from $\mu\text{g/l}$.

(*2) MAL's for Cresols: p-Chloro-m-Cresol 10 $\mu\text{g/l}$; 4,6-Dinitro-o-Cresol 50 $\mu\text{g/l}$; p-Cresol 10 $\mu\text{g/l}$

(*3) Total of PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, PCB-1016.

3. **TABLE 3:** Partial table (only those pollutants which are required by the conditions specified) required for each external outfall. Not required for internal outfalls. (Instructions, Page 34)

a. **TRIBUTYLTIN:**

Is your facility or will your proposed facility be an industrial/commercial facilities which directly disposes of wastewater from the types of operations listed below or a domestic facilities which receive wastewater from the types of industrial/commercial operations listed below? _____ Yes ☒ No

If yes, indicate with a check mark all of the following criteria which apply and provide the appropriate testing results in the table below.

- _____ Manufacturers and formulators of tributyltin or related compounds.
 _____ Painting of ships, boats and marine structures.
 _____ Ship and boat building and repairing.
 _____ Ship and boat cleaning, salvage, wrecking and scaling.
 _____ Operation and maintenance of marine cargo handling facilities and marinas
 _____ Facilities engaged in wood preserving
 _____ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. **ENTEROCOCCI**

Does your facility or will your proposed facility discharge directly into saltwater receiving waters?
 _____ Yes ☒ No

If yes, provide the appropriate testing results in the table below.

TABLE 3

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Effluent Concentration ($\mu\text{g/l}$)					
Pollutants		Samp. 1	Samp. 2	Samp. 3	Samp. 4	Average	MAL ($\mu\text{g/l}$)
Tributyltin							0.010
Enterococci							N/A

4. **TABLE 4:** Complete table required for all external outfalls which discharge process wastewater and other wastewaters, which may contain pesticides or herbicides, from a facility which manufactures or formulates pesticides or herbicides. Not required for internal outfalls. (Instructions, Page 35)

Does your facility manufacture or formulate pesticides or herbicides? ____ Yes ☒ No
If yes, provide the appropriate testing results.

TABLE 4

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Effluent Concentration ($\mu\text{g/l}$) (*1)					MAL ($\mu\text{g/l}$)
Pollutants		Samp. 1	Samp. 2	Samp. 3	Samp. 4	Avg.	
Beta-hexachlorocyclohexane							0.05
Carbaryl							5
Chlordane							0.15
Chlorpyrifos							0.05
2,4-D							10
Danitol							----
4,4'-DDD							0.1
4,4'-DDE							0.1
4,4'-DDT							0.1
Demeton							0.2
Diazinon							0.5
Dicofol							20
Dieldrin							0.1
Diuron							----
Endosulfan I (alpha)							0.1
Endosulfan II (beta)							0.1
Endosulfan Sulfate							0.1
Endrin							0.1
Gamma - Hexachlorocyclohexane (Lindane)							0.05
Guthion							0.10
Heptachlor							0.05
Heptachlor Epoxide							1.0
Hexachlorophene							10
Malathion							0.10
Methoxychlor							2.0
Mirex							0.2
Parathion							0.1
Toxaphene							5
2,4,5-TP (Silvex)							2

* Indicate units if different from mg/L.

5. **TABLE 5:** Complete table required for all external outfalls. Not required for internal outfalls.
(Instructions, Page 35)

TABLE 5

Outfall No.: 006	<input checked="" type="checkbox"/> C <input type="checkbox"/> G	Believed Present	Believed Absent	Effluent Concentration (mg/l)		
Pollutants				Average	Maximum	No. of Samples
Bromide			X	<0.2	0.3	4
Color(PCU)		X		8 pt. co.	13 pt. co.	4
Nitrate-Nitrite(as N)			X	<0.1	<0.1	4
Sulfide(as S)			X	<0.002	0.003	4
Sulfite(as SO ₃)			X	<2	<2	4
Surfactants			X	n/a	n/a	n/a
Total Antimony			X	<10 ug/l	<10 ug/l	4
Total Beryllium			X	<5 ug/l	<5 ug/l	4
Total Boron			X	1418 ug/l	1830 ug/l	4
Total Cobalt			X	<11 ug/l	13 ug/l	4
Total Iron		X		798 ug/l	900 ug/l	4
Total Magnesium		X		9900 ug/l	11,700 ug/l	4
Total Molybdenum			X	16 ug/l	23 ug/l	4
Total Manganese		X		66 ug/l	92 ug/l	4
Total Thallium			X	<4 ug/l	<5 ug/l	4
Total Tin			X	<50 ug/l	<50 ug/l	4
Total Titanium			X	23 ug/l	30 ug/l	4

6. **TABLE 6:** Indicate with a check mark any of the industrial categories applicable to your facility. If testing is required, indicate with a check mark in the box provided that the testing results for the appropriate parameters in Table B-7 are provided with the application. (Instructions, Page 35)

N/A	GC/MS Testing Required			
	Volatile	Acid	Base/Neutral	Pesticides
_____ Adhesives and Sealants	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Aluminum Forming	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Auto and Other Laundries	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
_____ Battery Manufacturing	Yes <input type="checkbox"/>	No	Yes <input type="checkbox"/>	No
_____ Coal Mining	No	No	No	No
_____ Coil Coating	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Copper Forming	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Electric and Electronic Components	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
_____ Electroplating	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Explosives Manufacturing	No <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Foundries	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Gum and Wood Chemicals				
_____ Subparts A,B,C,E	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No	No
_____ Subparts D,F	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Inorganic Chemicals	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Iron and Steel Manufacturing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Leather Tanning/Finishing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Mechanical Products Manufacturing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Nonferrous Metals Mfg.	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
_____ Ore Mining(Subpart B)	No	Yes <input type="checkbox"/>	No	No
_____ Organic Chemicals, Plastics, and Synthetic Fibers	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
_____ Paint and Ink Formulation	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Pesticides	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
_____ Petroleum Refining	Yes <input type="checkbox"/>	No	No	No
_____ Pharmaceutical Preparations	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Photographic Equipment and Supplies	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Plastic and Synthetic Materials Manufacturing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
_____ Plastic Processing	Yes <input type="checkbox"/>	No	No	No
_____ Porcelain Enameling	No	No	No	No
_____ Printing and Publishing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
_____ Pulp and Paperboard Mills				
_____ Subparts A	* <input type="checkbox"/>	Yes <input type="checkbox"/>	* <input type="checkbox"/>	Yes <input type="checkbox"/>
_____ Subparts B,C,D,R	* <input type="checkbox"/>	Yes <input type="checkbox"/>	* <input type="checkbox"/>	* <input type="checkbox"/>
_____ Subparts F,G,H,I,K,L,M,N,O,P	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	* <input type="checkbox"/>	* <input type="checkbox"/>
_____ Subparts E,Q,S,T	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	* <input type="checkbox"/>	Yes <input type="checkbox"/>
_____ Subparts J,U	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	* <input type="checkbox"/>
_____ Rubber Processing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Soap and Detergent Manufacturing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
✓ _____ Steam Electric Power Plants	Yes <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No	No
_____ Textile Mills (Not Subpart C)	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	No
_____ Timber Products Processing	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>

* Test if "believed present"

7. **TABLE 7:** Please complete as directed and only for those parameters specified in Table 6. Required for all external outfalls which contain process wastewater. Not required for internal outfalls. Testing may be required for types of industry not specified in Table 6 for specific parameters if believed present (Instructions, Page 36).

N/A

TABLE 7

Outfall No.: 006	<input checked="" type="checkbox"/> C <input type="checkbox"/> G	Effluent Concentration (µg/l) *			
Pollutants		Average	Maximum	No. of Samples	MAL (µg/l)
VOLATILE COMPOUNDS					
Acrolein		<50	<50	4	50
Acrylonitrile		<50	<50	4	50
Benzene		<10	<10	4	10
Bromoform		<10	<10	4	10
Carbon Tetrachloride		<10	<10	4	10
Chlorobenzene		<10	<10	4	10
Chlorodibromomethane		<10	<10	4	10
Chloroethane		<50	<50	4	50
2-Chloroethylvinyl Ether		<10	<10	4	10
Chloroform		<10	<10	4	10
Dichlorobromomethane		<10	<10	4	10
1,1-Dichloroethane		<10	<10	4	10
1,2,-Dichloroethane		<10	<10	4	10
1,1-Dichloroethylene		<10	<10	4	10
1,2-Dichloropropane		<10	<10	4	10
1,3-Dichloropropylene		<10	<10	4	10
Ethylbenzene		<10	<10	4	10
Methyl Bromide		<20	<20	4	20
Methyl Chloride		<50	<50	4	50
Methylene Chloride		<20	<20	4	20
1,1,2,2-Tetrachloroethane		<10	<10	4	10
Tetrachloroethylene		<50	<50	4	50
Toluene		<10	<10	4	10
1,2-Trans-Dichloroethylene		<10	<10	4	10
1,1,1-Trichloroethane		<10	<10	4	10
1,1,2-Trichloroethane		<10	<10	4	10
Trichloroethylene		<10	<10	4	10
Vinyl Chloride		<10	<10	4	10

Pollutants	Effluent Concentration (µg/l) *		No. of Samples	MAL (µg/l)
	Average	Maximum		
ACID COMPOUNDS				
2-Chlorophenol	<10	<10	4	10
2,4-Dichlorophenol	<10	<10	4	10
2,4-Dimethylphenol	<10	<10	4	10
4,6-Dinitro-o-Cresol	<50	<50	4	50
2,4-Dinitrophenol	<50	<50	4	50
2-Nitrophenol	<20	<20	4	20
4-Nitrophenol	<50	<50	4	50
P-Chloro-m-Cresol	<10	<10	4	10
Pentachlorophenol	<50	<50	4	50
Phenol	<10	<10	4	10
2,4,6-Trichlorophenol	<10	<10	4	10
BASE/NEUTRAL COMPOUNDS n/a				
Acenaphthene				10
Acenaphthylene				10
Anthracene				10
Benzidine				50
Benzo(a)Anthracene				10
Benzo(a)Pyrene				10
3,4-Benzofluoranthene				10
Benzo(ghi)Perylene				20
Benzo(k)Fluoranthene				10
Bis(2-Chloroethoxy)Methane				10
Bis(2-Chloroethyl)Ether				10
Bis(2-Chloroisopropyl)Ether				10
Bis(2-Ethylhexyl)Phthalate				10
4-Bromophenyl Phenyl Ether				10
Chrysene				10
Dibenzo(a,h)Anthracene				20
1,2-Dichlorobenzene				10
1,3-Dichlorobenzene				10
1,4-Dichlorobenzene				10
3,3-Dichlorobenzidine				50
Diethyl Phthalate				10
Dimethyl Phthalate				10
Di-n-Butyl Phthalate				10
2,4-Dinitrotoluene				10

Pollutants	Effluent Concentration ($\mu\text{g/l}$) *		No. of Samples	MAL ($\mu\text{g/l}$)
	Average	Maximum		
BASE/NEUTRAL COMPOUNDS (cont.) n/a				
2,6-Dinitrotoluene				10
Di-n-Octyl Phthalate				10
1,2-Diphenyl Hydrazine (as Azobenzene)				20
Fluoranthene				10
Fluorene				10
Hexachlorobenzene				10
Hexachlorobutadiene				10
Hexachlorocyclopentadiene				10
Hexachloroethane				20
Indeno(1,2,3-cd)pyrene				20
Isophorone				10
Naphthalene				10
Nitrobenzene				10
N-Nitrosodimethylamine				50
N-Nitrosodi-n-Propylamine				20
N-Nitrosodiphenylamine				20
Phenanthrene				10
Pyrene				10
1,2,4-Trichlorobenzene				10
PESTICIDES n/a				
Aldrin				0.05
alpha-BHC				0.05
beta-BHC				0.05
gamma-BHC				0.05
delta-BHC				0.05
Chlordane				0.15
4,4,-DDT				0.1
4,4,-DDE				0.1
4,4,-DDD				0.1
Dieldrin				0.1
alpha-Endosulfan				0.1
beta-Endosulfan				0.1
Endosulfan Sulfate				0.1
Endrin				0.1
Endrin Aldehyde				0.1
Heptachlor				0.05

Pollutants	Effluent Concentration ($\mu\text{g/l}$)		No. of Samples	MAL ($\mu\text{g/l}$)
	Average	Maximum		
PESTICIDES (cont.) n/a				
PCB-1254				1.0
PCB-1221				1.0
PCB-1232				1.0
PCB-1248				1.0
PCB-1260				1.0
PCB-1016				1.0
Toxaphene				5.0

* Indicate units if different from $\mu\text{g/l}$

8. **TABLE 8 (DIOXINS/FURAN COMPOUNDS)**: Please complete as directed. Not required for internal outfalls.
(Instructions, Page 36)

a. Are any of the following compounds manufactured and/or used in a process at the facility? ____ Yes ☒ No

If yes, indicate with a check mark the compound(s) which apply and provide a brief description of the conditions of its/their presence at the facility.

- ____ 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) CAS #93-76-5
 ____ 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP) CAS #93-72-1
 ____ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) CAS #136-25-4
 ____ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnell) CAS #299-84-3
 ____ 2,4,5-trichlorophenol (TCP) CAS #95-95-4
 ____ Hexachlorophene (HCP) CAS #70-30-4

b. Do you know or have any reason to believe that 2,3,7,8 Tetrachlorodibenzo-P-Dioxin (TCDD) or any congeners of TCDD may be present in your effluent? ____ Yes ☒ No

If yes, provide a brief description of the conditions for its presence.

c. If your responded yes to either item a or b, complete Table 8 as instructed.
n/a

TABLE 8

Outfall ____	<input type="checkbox"/> C <input type="checkbox"/> G	Wastewater		Sludge		
Compound	Equivalent Factors	Concentration (ppq)	Equivalents (ppq)	Concentration (ppt)	Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10.0
1,2,3,7,8-PeCDD	0.5					50.0
2,3,7,8-HxCDDs	0.1					50.0
2,3,7,8-TCDF	0.1					10.0
1,2,3,7,8-PeCDF	0.05					50.0
2,3,4,7,8-PeCDF	0.5					50.0
2,3,7,8-HxCDFs	0.1					50.0
Total						

9. **TABLE 9 (HAZARDOUS SUBSTANCES)**: Proceed complete as directed. Not required for internal outfalls.
(Instructions, Page 37)

a. Are there any pollutants listed in the instructions (page 37) believed present in the discharge?

_____ Yes ☒ No

b. Are there pollutants listed in Item No. 1.d. on Page No. 1 of this technical report which are believed present in the discharge and have not been analytically quantified elsewhere in this application? _____ Yes ☒ No

If your responded yes to either item, complete Table 9 as instructed.

TABLE 9

n/a

Pollutant & CAS Number	Average ($\mu\text{g/l}$)	Maximum ($\mu\text{g/l}$)	No. of Samples	Analytical Method

WORKSHEET 4.0 - RECEIVING WATERS

THE FOLLOWING IS REQUIRED FOR ALL TPDES PERMIT APPLICATIONS

1. DOMESTIC DRINKING WATER SUPPLY (Instructions, Page 46)

For Outfalls 002, 003, 302, 202, and 102

Is there a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge? ____ Yes ☒ No

If yes, identify owner of the drinking water supply, the distance and direction to the intake, and locate and identify the intake on the USGS map. Indicate by a check mark that the requested information is provided: ____

2. DISCHARGE INTO TIDALLY INFLUENCED WATERS (Instructions, Page 46)

n/a

a. Width of the receiving water at the outfall? _____ feet

b. Are there oyster reefs in the vicinity of the discharge? ____ Yes ____ No

If yes, indicate approximate distance and direction from outfall(s): _____

c. Are there any sea grasses within the vicinity of the point of discharge? ____ Yes ____ No

If yes, provide the distance and direction to the grasses: _____

3. CLASSIFIED SEGMENT (Instructions, Page 46)

Is the discharge directly into (or within 300 feet of) a classified segment? ____ Yes ☒ No

If yes, stop here. It is not necessary to complete items 4 and 5 and it is not necessary to complete Worksheet 2.1.
If no, complete items 4 and 5.

4. DESCRIPTION OF IMMEDIATE RECEIVING WATERS (Instructions, Pages 46)

Name of the immediate receiving waters: Brandy Branch Reservoir

a. Check the appropriate description of the receiving waters

____ Open Bay

____ Tidal Stream, Bayou, or Marsh

☒ Lake or Pond

____ Surface area 1250 acres. Average depth of the entire water body 25 feet

____ Average depth of water body within a 500-foot radius or the discharge point 20 feet

____ Freshwater Swamp or Marsh

____ Other: _____

____ Man-made Channel or Ditch

____ Stream

If a man-made channel, ditch or stream was checked above, provide the following:

n/a

b. Check one of the following that best characterizes the area **upstream** of the discharge. For new discharges, characterize the area **downstream** or discharge (check one).

____ Intermittent (dry for at least one week during most years)

____ Intermittent with Perennial Pools (enduring pools containing sufficient habitat to maintain significant aquatic life uses)

____ Perennial (normally flowing)

Check the method used to characterize the area upstream (or downstream for new dischargers): ☐ USGS flow records, ☐ personal observation, ☐ historical observation by adjacent landowner(s), ☐ others, specify:

c. List the name(s) of all perennial streams that join the receiving water within three miles downstream of the discharge point: **n/a**

d. Do the receiving water characteristics change within three miles downstream of the discharge? (e.g., natural or man-made dams, ponds, reservoirs, etc.) ☐ Yes ☐ No **n/a**
If yes, discuss how:

e. Provide general observations of the water body during normal dry weather conditions: **n/a**

Date and time of observation:

Was water body influenced by storm water runoff during observations? ☐ Yes ☐ No

5. GENERAL CHARACTERISTICS OF WATER BODY(Instructions, Page 47)

a. Is the receiving water upstream of the discharges or proposed discharge site influenced by (check as appropriate): **n/a**

<input type="checkbox"/> oil field activities	<input type="checkbox"/> urban runoff
<input type="checkbox"/> agricultural runoff	<input type="checkbox"/> septic tanks
<input type="checkbox"/> upstream discharges	<input type="checkbox"/> others, specify below

b. Uses of water body, observed or evidences of (check as appropriate):

<input type="checkbox"/> livestock watering	<input checked="" type="checkbox"/> contact recreation	<input type="checkbox"/> irrigation withdrawal
<input checked="" type="checkbox"/> non contact recreation	<input checked="" type="checkbox"/> fishing	<input type="checkbox"/> navigation
<input checked="" type="checkbox"/> domestic water supply	<input checked="" type="checkbox"/> industrial water supply	<input checked="" type="checkbox"/> picnic park activities
<input type="checkbox"/> others, specify below		

c. Check one of the following to best describe the aesthetics of the receiving water and the surrounding area:

☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area: water clarity exceptional
☒ Natural Area: trees and/or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity discolored
☐ Common Setting: not offensive, developed but uncluttered; water may be colored or turbid
☐ Offensive: stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

WORKSHEET 4.0 - RECEIVING WATERS

THE FOLLOWING IS REQUIRED FOR ALL TPDES PERMIT APPLICATIONS

1. DOMESTIC DRINKING WATER SUPPLY (Instructions, Page 46)

For Outfalls 004, 005, and 006

Is there a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge? ____ Yes ☒ No

If yes, identify owner of the drinking water supply, the distance and direction to the intake, and locate and identify the intake on the USGS map. Indicate by a check mark that the requested information is provided: ____

2. DISCHARGE INTO TIDALLY INFLUENCED WATERS (Instructions, Page 46)

n/a
a. Width of the receiving water at the outfall? ____ feet

b. Are there oyster reefs in the vicinity of the discharge? ____ Yes ____ No

If yes, indicate approximate distance and direction from outfall(s): ____

c. Are there any sea grasses within the vicinity of the point of discharge? ____ Yes ____ No

If yes, provide the distance and direction to the grasses: ____

3. CLASSIFIED SEGMENT (Instructions, Page 46)

Is the discharge directly into (or within 300 feet of) a classified segment? ____ Yes ☒ No

If yes, stop here. It is not necessary to complete items 4 and 5 and it is not necessary to complete Worksheet 2.1. If no, complete items 4 and 5.

4. DESCRIPTION OF IMMEDIATE RECEIVING WATERS (Instructions, Pages 46)

Name of the immediate receiving waters: Unnamed tributary, thence to Hatley Creek

a. Check the appropriate description of the receiving waters

- ____ Open Bay
____ Tidal Stream, Bayou, or Marsh
____ Lake or Pond
____ Surface area ____ acres. Average depth of the entire water body ____ feet
____ Average depth of water body within a 500-foot radius or the discharge point ____ feet
____ Freshwater Swamp or Marsh
____ Other: ____
____ Man-made Channel or Ditch
☒ Stream

If a man-made channel, ditch or stream was checked above, provide the following:

- n/a
b. Check one of the following that best characterizes the area **upstream** of the discharge. For new discharges, characterize the area **downstream** or discharge (check one).
____ Intermittent (dry for at least one week during most years)
____ Intermittent with Perennial Pools (enduring pools containing sufficient habitat to maintain significant aquatic life uses)
____ Perennial (normally flowing)

Check the method used to characterize the area upstream (or downstream for new dischargers): ☐ USGS flow records, ☒ personal observation, ☐ historical observation by adjacent landowner(s), ☐ others, specify: _____

c. List the name(s) of all perennial streams that join the receiving water within three miles downstream of the discharge point:

Hatley Creek

d. Do the receiving water characteristics change within three miles downstream of the discharge? (e.g., natural or man-made dams, ponds, reservoirs, etc.) ☐ Yes ☒ No

If yes, discuss how:

e. Provide general observations of the water body during normal dry weather conditions:

Intermittent, low flow.

Date and time of observation: Numerous during summer of 2000 - 2001

Was water body influenced by storm water runoff during observations? ☐ Yes ☒ No

5. GENERAL CHARACTERISTICS OF WATER BODY(Instructions, Page 47)

a. Is the receiving water upstream of the discharges or proposed discharge site influenced by (check as appropriate): ☒ n/a

☐ oil field activities
☐ agricultural runoff
☐ upstream discharges

☐ urban runoff
☐ septic tanks
☐ others, specify below

b. Uses of water body, observed or evidences of (check as appropriate): ☒ n/a

☐ livestock watering
☐ non contact recreation
☐ domestic water supply
☐ others, specify below

☐ contact recreation
☐ fishing
☐ industrial water supply

☐ irrigation withdrawal
☐ navigation
☐ picnic park activities

c. Check one of the following to best describe the aesthetics of the receiving water and the surrounding area:

- ☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area; water clarity exceptional
☒ Natural Area: trees and/or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity discolored
☐ Common Setting: not offensive, developed but uncluttered; water may be colored or turbid
☐ Offensive: stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

WORKSHEET 7.0 - STORM WATER RUNOFF WORKSHEET

REQUIRED FOR ALL TPDES PERMIT APPLICATIONS APPLYING FOR INDIVIDUAL PERMIT COVERAGE FOR DISCHARGES OF STORM WATER RUNOFF.

1. Do discharges from any of the proposed or existing outfalls consist of storm water runoff only or storm water runoff and any of the listed non-storm water discharges (See Instructions, Page 54)?
☒ Yes ☐ No

If yes, proceed as directed. If no, stop here.

2. Indicate by a check mark which type of authorization covers or is proposed to cover discharges from each storm water outfall.

Outfall	Coverage Under MSGP	Coverage Under Individual Permit	Outfall	Coverage Under MSGP	Coverage Under Individual Permit
003		X			
004		X			
005		X			

If you have indicated that all existing or proposed storm water outfalls are covered under the MSGP, **stop here**.
 If you have indicated that you are seeking authorization under an individual permit, **proceed as directed**.

THE FOLLOWING ITEMS ARE REQUIRED FOR EACH OUTFALL THAT DISCHARGES STORM WATER, AND FOR WHICH YOU ARE SEEKING INDIVIDUAL AUTHORIZATION UNDER THIS PERMIT APPLICATION.

3. **Site Map** (Instructions, page 54) - Indicate by a check mark that a site map(s) of the entire facility has been provided with the following information
- ☒ the location of each storm water outfall to be covered by the permit;
 - ☒ an outline of the drainage area that is within the facility's boundary and that contributes storm water to each outfall to be covered by the permit;
 - ☒ connections or discharge points to municipal separate storm sewer systems;
 - ☒ locations of all structures (e.g. buildings, garages, storage tanks);
 - ☒ structural control devices that are designed to reduce pollution in storm water runoff;
 - ☒ process wastewater treatment units (including ponds);
 - ☒ bag house and other air treatment units exposed to precipitation or runoff;
 - ☒ landfills; scrapyards; surface water bodies (including wetlands);
 - ☒ vehicle and equipment maintenance areas;
 - ☒ physical features of the site that may influence storm water runoff or contribute a dry weather flow;
 - ☒ locations where spills or leaks of reportable quality (as defined in 30 TAC §327.4) have occurred during the three years before this application was submitted to obtain coverage under an individual permit; and
 - ☒ processing areas, storage areas, material loading/unloading areas, and other locations where significant materials are exposed to precipitation or runoff.

4. FACILITY/SITE INFORMATION (Instructions, page 55)

- a. Provide an inventory, or list, of materials currently handled at the facility that may be exposed to precipitation.

See Attachment G

- b. Provide a narrative descriptions of the industrial processes and activities involving the materials in the above-listed inventory that occur outdoors or in some manner that may result in exposure of the materials to precipitation or runoff.

See Attachment H

- c. Describe any best management practices and controls that you are using to prevent or effectively reduce pollution in storm water discharges from the facility.

See Attachment H

5. POLLUTANT ANALYSIS (Instructions, page 55)

a. TABLE 1-SW: Please complete the table as directed.

Outfall <u>003</u>	MAXIMUM VALUES (mg/L)		AVERAGE VALUES (mg/L)		Number of Storm Events Sampled	MAL (mg/L)
	Grab Sample Taken During First 30 Minutes	Flow Weighted Composite Sample	Grab Sample Taken During First 30 Minutes	Flow Weighted Composite Sample		
Pollutant						
pH (Standard Units)	<u>7.7</u> (min)	____ (max)	<u>7.7</u> (min)	____ (max)	<u>**</u>	---
Total Suspended Solids	<u>3</u>	____	<u>3</u>	____	<u>**</u>	---
Chemical Oxygen Demand	<u>19</u>	____	<u>19</u>	____	<u>**</u>	---
Total Organic Carbon	<u>7.2</u>	____	<u>7.2</u>	____	<u>**</u>	---
Oil and Grease	<u><5</u>	____	<u><5</u>	____	<u>**</u>	---
Total Arsenic	<u>1</u> ug/l	____	<u>1</u> ug/l	____	<u>**</u>	0.010
Total Barium	<u>79</u> ug/l	____	<u>79</u> ug/l	____	<u>**</u>	0.010
Total Cadmium	<u><1</u> ug/l	____	<u><1</u> ug/l	____	<u>**</u>	0.001
Total Chromium	<u><10</u> ug/l	____	<u><10</u> ug/l	____	<u>**</u>	0.010
Trivalent Chromium	<u><10</u> ug/l	____	<u><10</u> ug/l	____	<u>**</u>	---
Hexavalent Chromium	<u><10</u> ug/l	____	<u><10</u> ug/l	____	<u>**</u>	0.010
Total Copper	<u><10</u> ug/l	____	<u><10</u> ug/l	____	<u>**</u>	0.010
Total Lead	<u><1</u> ug/l	____	<u><1</u> ug/l	____	<u>**</u>	0.005
Total Mercury	<u><0.2</u> ug/l	____	<u><0.2</u> ug/l	____	<u>**</u>	0.0002
Total Nickel	<u><10</u> ug/l	____	<u><10</u> ug/l	____	<u>**</u>	0.010
Total Selenium	<u>35</u> ug/l	____	<u>35</u> ug/l	____	<u>**</u>	0.010
Total Silver	<u><2</u> ug/l	____	<u><2</u> ug/l	____	<u>**</u>	0.002
Total Zinc	<u><5</u> ug/l	____	<u><5</u> ug/l	____	<u>**</u>	0.005

** Analyses are from one grab sample taken out of the stormwater collection pond.
See Item No. 6 on page 7-5.

b. TABLE 2-SW: Please complete the table as directed. (Instructions, Page 55)

[illegible]

6. STORM EVENT DATA (Instructions, page 57)

Please provide the following data for the storm event(s) which resulted in the maximum values for the analytical data submitted: n/a **Discharge is very infrequent from this outfall. Pond water was sampled as per the instructions for the application. Pond was not discharging at time of sampling.

- a. Date of storm event: n/a
- b. Duration of storm event (in minutes): n/a
- c. Total rainfall during storm event (in inches): n/a
- d. Number of hours between beginning of storm measured and end of previous measurable rain event: n/a hours
- e. Maximum flow rate during rain event (gallons/minute): n/a
- f. Total storm water flow from rain event (in gallons): n/a
- g. Provide a description of the method of flow measurement or estimate: n/a

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b. TABLE 2-SW: Please complete the table as directed. (Instructions, Page 55)

[illegible]

6. STORM EVENT DATA(Instructions, page 57)

Please provide the following data for the storm event(s) which resulted in the maximum values for the analytical data submitted: n/a **This outfall is a controlled discharge of stormwater only. Stormwater is only discharged after settling and treatment by precipitation are accomplished (as necessary).

- precipitation are accomplished (as necessary).
- a. Date of storm event: n/a
- b. Duration of storm event (in minutes): n/a
- c. Total rainfall during storm event (in inches): n/a
- d. Number of hours between beginning of storm measured and end of previous measurable rain event:
n/a hours
- e. Maximum flow rate during rain event (gallons/minute): n/a
- f. Total storm water flow from rain event (in gallons): n/a
- g. Provide a description of the method of flow measurement or estimate:

5. POLLUTANT ANALYSIS(Instructions, page 55)

a. TABLE 1-SW: Please complete the table as directed.

Outfall <u>004</u>	MAXIMUM VALUES (mg/L)		AVERAGE VALUES (mg/L)		Number of Storm Events Sampled	MAL (mg/L)
	Grab Sample Taken During First 30 Minutes	Flow Weighted Composite Sample	Grab Sample Taken During First 30 Minutes	Flow Weighted Composite Sample		
Pollutant						
pH (Standard Units)	<u>6.8</u> (min)	____ (max)	<u>6.8</u> (min)	____ (max)	<u>**</u>	---
Total Suspended Solids	<u>9</u>	____	<u>9</u>	____	<u>**</u>	---
Chemical Oxygen Demand	<u>17</u>	____	<u>17</u>	____	<u>**</u>	---
Total Organic Carbon	<u>7.7</u>	____	<u>7.7</u>	____	<u>**</u>	---
Oil and Grease	<u><5</u>	____	<u><5</u>	____	<u>**</u>	---
Total Arsenic	<u>6</u> ug/l	____	<u>6</u> ug/l	____	<u>**</u>	0.010
Total Barium	<u>92</u> ug/l	____	<u>92</u> ug/l	____	<u>**</u>	0.010
Total Cadmium	<u><1</u> ug/l	____	<u><1</u> ug/l	____	<u>**</u>	0.001
Total Chromium	<u><10</u> ug/l	____	<u><10</u> ug/l	____	<u>**</u>	0.010
Trivalent Chromium	<u><10</u> ug/l	____	<u><10</u> ug/l	____	<u>**</u>	---
Hexavalent Chromium	<u><10</u> ug/l	____	<u><10</u> ug/l	____	<u>**</u>	0.010
Total Copper	<u><10</u> ug/l	____	<u><10</u> ug/l	____	<u>**</u>	0.010
Total Lead	<u><1</u> ug/l	____	<u><1</u> ug/l	____	<u>**</u>	0.005
Total Mercury	<u><0.2</u> ug/l	____	<u><0.2</u> ug/l	____	<u>**</u>	0.0002
Total Nickel	<u><10</u> ug/l	____	<u><10</u> ug/l	____	<u>**</u>	0.010
Total Selenium	<u>14</u> ug/l ***	____	<u>14</u> ug/l ***	____	<u>**</u>	0.010
Total Silver	<u><2</u> ug/l	____	<u><2</u> ug/l	____	<u>**</u>	0.002
Total Zinc	<u>5</u> ug/l	____	<u>5</u> ug/l	____	<u>**</u>	0.005

** Analyses reported are from a controlled discharge of a stormwater collection pond. See Item No. 6 on page 7-5.

*** Analysis for this discharged parameter performed at Pirkey Power Plant laboratory.

5. POLLUTANT ANALYSIS(Instructions, page 55)

a. TABLE 1-SW: Please complete the table as directed.

Outfall <u>005</u>	MAXIMUM VALUES (mg/L)		AVERAGE VALUES (mg/L)		Number of Storm Events Sampled	MAL (mg/L)
	Grab Sample Taken During First 30 Minutes	Flow Weighted Composite Sample	Grab Sample Taken During First 30 Minutes	Flow Weighted Composite Sample		
Pollutant						
pH (Standard Units)	<u>7.2</u> (min)	____ (max)	<u>7.2</u> (min)	____ (max)	<u>**</u>	---
Total Suspended Solids	<u>64</u>	____	<u>64</u>	____	<u>**</u>	---
Chemical Oxygen Demand	<u>18</u>	____	<u>18</u>	____	<u>**</u>	---
Total Organic Carbon	<u>6.3</u>	____	<u>6.3</u>	____	<u>**</u>	---
Oil and Grease	<u><5</u>	____	<u><5</u>	____	<u>**</u>	---
Total Arsenic	<u>2 ug/1</u>	____	<u>2 ug/1</u>	____	<u>**</u>	0.010
Total Barium	<u>99 ug/1</u>	____	<u>99 ug/1</u>	____	<u>**</u>	0.010
Total Cadmium	<u><1 ug/1</u>	____	<u><1 ug/1</u>	____	<u>**</u>	0.001
Total Chromium	<u><10 ug/1</u>	____	<u><10 ug/1</u>	____	<u>**</u>	0.010
Trivalent Chromium	<u><10 ug/1</u>	____	<u><10 ug/1</u>	____	<u>**</u>	---
Hexavalent Chromium	<u><10 ug/1</u>	____	<u><10 ug/1</u>	____	<u>**</u>	0.010
Total Copper	<u><10 ug/1</u>	____	<u><10 ug/1</u>	____	<u>**</u>	0.010
Total Lead	<u>1 ug/1</u>	____	<u>1 ug/1</u>	____	<u>**</u>	0.005
Total Mercury	<u><0.2 ug/1</u>	____	<u><0.2 ug/1</u>	____	<u>**</u>	0.0002
Total Nickel	<u><10 ug/1</u>	____	<u><10 ug/1</u>	____	<u>**</u>	0.010
Total Selenium	<u>2 ug/1</u>	____	<u>2 ug/1</u>	____	<u>**</u>	0.010
Total Silver	<u><2 ug/1</u>	____	<u><2 ug/1</u>	____	<u>**</u>	0.002
Total Zinc	<u><5 ug/1</u>	____	<u><5 ug/1</u>	____	<u>**</u>	0.005

** Analyses reported are from a controlled discharge of a stormwater collection pond. See Item No. 6 on page 7-5.

b. TABLE 2-SW: Please complete the table as directed. (Instructions, Page 55)

[illegible]

6. STORM EVENT DATA (Instructions, page 57)

Please provide the following data for the storm event(s) which resulted in the maximum values for the analytical data submitted: n/a This outfall is a controlled discharge of storm water only. Storm water is only discharged after settling and treatment by precipitation are accomplished (as necessary). Ferric sulfate used as a precipitating agent to reduce selenium concentrations in the discharge.

- a. Date of storm event: n/a
- b. Duration of storm event (in minutes): n/a
- c. Total rainfall during storm event (in inches): n/a
- d. Number of hours between beginning of storm measured and end of previous measurable rain event:
n/a hours
- e. Maximum flow rate during rain event (gallons/minute): n/a
- f. Total storm water flow from rain event (in gallons): n/a
- g. Provide a description of the method of flow measurement or estimate: n/a

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ATTACHMENT A

ORIGINAL USGS TOPOGRAPHIC MAP

ATTACHMENT B

LANDOWNER MAP AND INFORMATION

PRELIMINARY LINE LIST- PIRKEY POWELL PLANT

TRACT	LEASE	NAME	ADDRESS
#5-5	LH-235A	ESTELLA DANIELS/ LINDA FULLER	1803 THOMAS ST, MARSHALL, TX 75672
#5-5	LH-235B	BRANDY ADKINS	8430 ANTOINE DR #291, HOUSTON, TX 77088
#5-5	LH-235B	CALVIN HENRY ADKINS	1117 EDWARDS STREET, HOUSTON, TX 77007
#5-5	LH-235B	GERALDINE ADKINS	8430 ANTOINE DR #291, HOUSTON, TX 77088
#5-5	LH-235B	HARRIET ADKINS WILLIAMS	5300 COKE ST #68, HOUSTON, TX 77020
#5-5	LH-235B	JOSEPH EARL ADKINS	1512 GALE, HOUSTON, TX 77060
#5-5	LH-235B	KEITH RENARD ADKINS	1117 EDWARDS STREET, HOUSTON, TX 77007
#5-5	LH-235B	LYNN MARIE ADKINS STEPHENS	6603 HIRSCH RD #115, HOUSTON, TX 77026
#5-5	LH-235B	RACHEL ADKINS HOWARD	4121 EAST KRESS ST, HOUSTON, TX 77026
#5-5	LH-235B	WILMA JEAN MOSS	13106 CHAPMAN AVE #4218, GARDEN GROVE, CA 92840
#5-5	LH-235C	LOTTIE FULLER SIMPSON	4209 LORIN ST, FORT WORTH, TX 76105
#5-5	LH-235D	JAMES H SIMPSON	4424 BURTON AVE, FORT WORTH, TX 76105
#5-5	LH-235E	ZERLENA H FULLER	10926 ANZAC ST, LOS ANGELES, CA 90059
#5-5	LH-235F	BOBBY G WASHINGTON	107 WINGATE, LONGVIEW, TX 75603
#5-5	LH-235F	DARRELL WASHINGTON	108 W CULVER AVE, LONGVIEW, TX 75602
#5-5	LH-235F	INETA WASHINGTON ROBINSON	108 W CULVER AVE, LONGVIEW, TX 75602
#5-5	LH-235F	LARRY WASHINGTON	1501 STONEWALL ST, LONGVIEW, TX 75604
#5-5	LH-235F	RUBEN WASHINGTON	108 W CULVER AVE, LONGVIEW, TX 75602
#5-5	LH-235F	WILLIE L WASHINGTON	108 W CULVER AVE, LONGVIEW, TX 75602
#5-5	LH-235G	DENISE ADKINS RAINEY	1305 GAZANIA CIRCLE, RIVERSIDE, CA 92501
#5-5	LH-235G	DENNIS ADKINS	1305 GAZANIA CIRCLE, RIVERSIDE, CA 92501
#5-5	LH-235G	DONALD ADKINS	1305 GAZANIA CIRCLE, RIVERSIDE, CA 92501
#5-5	LH-235H	TOMMIE LEE HESTER JAMERSON	212 BROWN, LONGVIEW, TX 75602
#5-5	LH-235I	SYLVIA HESTER BLAIR EST	941 JESSAMINE ST, FORT WORTH, TX 76104
#5-5	LH-235J	ZEPHYR ADKINS PRUITT	2328 9TH ST, BERKELEY, CA 94710
#5-5	LH-235K	MERCEDESE HESTER FRENCH	706 3/4 W 76TH, LOS ANGELES, CA 90044
#5-5	LH-235L	VELMA HESTER COLE IND & ADM	4721 S ARLINGTON AVE, LOS ANGELES, CA 90043
#5-5	LH-235M	VELMA HESTER COLE IND & ADM	4721 S ARLINGTON AVE, LOS ANGELES, CA 90043
#5-5	LH-235N	HORATIO ADKINS	635 E 121ST ST, LOS ANGELES, CA 90059
#5-5	LH-235O	DORA FULLER	232 W 40TH PLACE, LOS ANGELES, CA 90037
#5-5	LH-235O	ELLA MAE FULLER WALKER	4217 WHITEHALL, FORT WORTH, TX 76119
#5-5	LH-235O	JAMES EARL FULLER	PO BOX 171081, DALLAS, TX 75217
#5-5	LH-235O	MARIE FULLER JOHNSON	1510 E BIRDSONG, LONGVIEW, TX 75602
#5-5	LH-235O	RAINEY HAYES FULLER	4603 E CROSSTIMBERS ST, HOUSTON, TX 77016-6336
#5-5	LH-235O	RAY EDWARD FULLER	2013 SO GREEN ST #A, LONGVIEW, TX 75602
#5-5	LH-235O	RAYFORD H FULLER	1501 CLOVERDALE, FORT WORTH, TX 76134
#5-5	LH-235P	ALONZO COPELAND	1404 SPRING, MARSHALL, TX 75670
#5-5	LH-235Q	THOMAS HENRY WOODKINS	1509 SPRING, MARSHALL, TX 75670
#5-6	LH-253A	CLARICE JOHNSON	2422 CHEW, HOUSTON, TX 77020
#5-6	LH-253A	GENEVA COUCH	6646 OUTLOOK, OAKLAND, CA 94605
#5-6	LH-253A	JEFFREY GILLIAM	1239 PARKER, BERKLEY, CA 94702
#5-6	LH-253A	L H GILLIAM	1239 PARKER, BERKLEY, CA 94702
#5-6	LH-253A	MARGARET HAYES	1239 PARKER, BERKLEY, CA 94702
#5-6	LH-253A	TAFT GILLIAM	1239 PARKER, BERKLEY, CA 94702
#5-6	LH-253B	PEARLIE LACY BLAIR	426 42ND ST, OAKLAND, CA 94609
#5-6	LHF-20	NONA BELLE PORTER	RT 2, BOX 577, MARSHALL, TX 75670
#5-6	LHF-20	RICHARD PORTER JR	RT 2, BOX 577, MARSHALL, TX 75670
#5-14	LH	DELIA ALEXANDER FULLER	4016 COLUMBUS STREET, DETROIT, MI 48204
#5-14	LH	EARL FULLER	4016 COLUMBUS STREET, DETROIT, MI 48204
#5-14	LH	HOUSTON FULLER	4016 COLUMBUS STREET, DETROIT, MI 48204
#5-14	LH	LUVIDA FULLER	4016 COLUMBUS STREET, DETROIT, MI 48204
#5-14	LH	ORA FULLER	4016 COLUMBUS STREET, DETROIT, MI 48204
#5-14	LH-240A	CAROL ANN SMITH PARKER	1205 E LAFAYETTE, OKMULGEE, OK 74447
#5-14	LH-240A	KENNETH LAWRENCE PARKER	1205 E LAFAYETTE, OKMULGEE, OK 74447
#5-14	LH-240A	MAXINE PARKER	1205 E LAFAYETTE, OKMULGEE, OK 74447
#5-14	LH-240AA	BETTY LOU MCFADDEN BARBEE	1015 BOAT LANDING RD, BOWLING GREEN, KY 42101
#5-14	LH-240B	JAMES D FULLER JR	835 EAST 6TH ST, ADA, OK 74280

PRELIMINARY LINE LIST - PIRKEY POWELL PLANT

TRACT	LEASE	NAME	ADDRESS
#5-14	LH-240B	JANICE M PRATT	4948 NANCY AVENUE, LAS VEGAS, NV 89120
#5-14	LH-240BB	LEROY MCFADDEN	BRYANTS VILLAGE #3, BOWLING GREEN, KY 42101
#5-14	LH-240C	CLARA L WHITE FLOWERS	4109 BROOKLYN, KANSAS CITY, MO 64130
#5-14	LH-240C	ROSA M CLARK	1812 N OVERBROOK, OKLAHOMA CITY, OK 73121
#5-14	LH-240CC	WILLIE BROUSSARD	4433 PARK, KANSAS CITY, MO 64130
#5-14	LH-240D	DUDLEY FULLER	2613 NE RHODE ISLAND, OKLAHOMA CITY, OK 73111
#5-14	LH-240DD	CHARLES E. JOHNSON	6117 WALROND, KANSAS CITY, MO 64130
#5-14	LH-240E	LOTTIE FULLER SMITH	914 W 133RD ST, COMPTON, CA 90222
#5-14	LH-240EE	LINDA KAYE PARKER	1727 MASSACHUSETTS NW #401, WASHINGTON, DC 20036
#5-14	LH-240F	OLLIE MAE FULLER REED	947 W 127TH ST, COMPTON, CA 90222
#5-14	LH-240FF	LORETTA GARRISON	4443 WRENWOOD, BALTIMORE, MD 21212
#5-14	LH-240G	LEROY MCFADDEN JR	3022 TOWNSEND ST, ADA, OK 74820-1025
#5-14	LH-240GG	W B HAWKINS	4503 COWAN AVE, DALLAS, TX 75209
#5-14	LH-240H	CAROL PARKER WILLIAMS	17455 FLEMING, DETROIT, MI 48212
#5-14	LH-240H	CLIFFORD PARKER	17455 FLEMING, DETROIT, MI 48212
#5-14	LH-240H	GOLDIE PARKER	17455 FLEMING, DETROIT, MI 48212
#5-14	LH-240H	WILLIAM H. PARKER JR	17455 FLEMING, DETROIT, MI 48212
#5-14	LH-240HH	YVONNE WILLIAMS	128 NE 16TH, OKLAHOMA CITY, OK 73104
#5-14	LH-240I	WANDA EUBANKS RAY	PO BOX 1745, TUSCALOOSA, AL 35403
#5-14	LH-240II	JOHN D WASHINGTON	128 NE 16TH, OKLAHOMA CITY, OK 73104
#5-14	LH-240J	JODIE PARKER	15828 HOLMUR, DETROIT, MI 48238
#5-14	LH-240JJ	ANGELA WILSON	915 E CHICAGO, OKMULGEE, OK 74447
#5-14	LH-240JJ	CAROLYN COLLINS	718 E LAFAYETTE, OKMULGEE, OK 74447
#5-14	LH-240JJ	CHARLES D WILSON	915 E CHICAGO, OKMULGEE, OK 74447
#5-14	LH-240JJ	JANICE HOPKINS	3108 NORTHRIDGE, PURCELL, OK 73080
#5-14	LH-240JJ	KEITH D. WILSON	915 E CHICAGO, OKMULGEE, OK 74447
#5-14	LH-240JJ	MARK WILSON	915 E CHICAGO, OKMULGEE, OK 74447
#5-14	LH-240K	ORA LEE GRAY	18476 SANTA BARBARA, DETROIT, MI 48221
#5-14	LH-240KK	CORINE SHOULDERS TURNER	507 E ZION, TULSA, OK 74106
#5-14	LH-240L	CALVIN SADDLER	1832 PILGRIM, DETROIT, MI 48238
#5-14	LH-240LL	JEAN SHOULDERS	1626 ADAMS APT 1, MILPITAS, CA 95035
#5-14	LH-240M	QUITMAN PARKER	2653 COLUMBUS, DETROIT, MI 48206
#5-14	LH-240MM	TOM SHOULDERS	1122 1/2 E 70TH ST, LOS ANGELES, CA 90001
#5-14	LH-240N	WHITMAN DABBS	1830 S FAIRFAX, LOS ANGELES, CA 90019
#5-14	LH-240NN	LAWRENCE VERNON WASHINGTON	128 NE 16TH, OKLAHOMA CITY, OK 73104
#5-14	LH-240O	HERBERT DABBS	3000 POTOMAC, LOS ANGELES, CA 90016
#5-14	LH-240OO	MELVIN LAWSON	RT 2, BOX 189 A, OMAHA, TX 75571
#5-14	LH-240P	DORIS DABBS	558 BROOKS AVE, VENICE, CA 90291
#5-14	LH-240P	EDWARD DABBS	558 BROOKS AVE, VENICE, CA 90291
#5-14	LH-240P	ERNESTINE DABBS ANDERSON	558 BROOKS AVE, VENICE, CA 90291
#5-14	LH-240P	PETRONIA DABBS COLLINS	558 BROOKS AVE, VENICE, CA 90291
#5-14	LH-240PP	JAMES NAPOLEON LAWSON	1606 N PRATER ST, LAKE CHARLES, LA 70601
#5-14	LH-240Q	ATTRELL B JONES	1167 ALVIRA, LOS ANGELES, CA 90035
#5-14	LH-240Q	CHAUCER A JONES	1167 ALVIRA, LOS ANGELES, CA 90035
#5-14	LH-240Q	DOLAN N JONES	1167 ALVIRA, LOS ANGELES, CA 90035
#5-14	LH-240Q	PHILLIP R JONES	1167 ALVIRA, LOS ANGELES, CA 90035
#5-14	LH-240QQ	WILLIAM PARKER	228 GOLD MINE DR., SAN FRANCISCO, CA 94131
#5-14	LH-240R	DALE ARTHUR MCFADDEN	4433 PARK, KANSAS CITY, MO 64130
#5-14	LH-240RR	HAZEL PARKER WILLIAMS	1243 FULTON ST, SAN FRANCISCO, CA 94117
#5-14	LH-240S	FREDDIE J JOHNSON	P O BOX 8321, ROWLAND HEIGHTS, CA 91748
#5-14	LH-240T	ROSETTA MCFADDEN KING	8560 E ARTESIA BLVD #14, BELLFLOWER, CA 90706
#5-14	LH-240U	ROY L HENDERSON	P O BOX 211, JUNEAU, AK 99803
#5-14	LH-240V	JAMES LEE MCFADDEN	914 W 133RD ST, COMPTON, CA 90222
#5-14	LH-240W	ELIZABETH MCFADDEN DENNIS	4433 PARK, KANSAS CITY, MO 64130
#5-14	LH-240X	CHARLES JOHNSON	4433 PARK, KANSAS CITY, MO 64130
#5-14	LH-240Y	TRAVIS JOE PARKER	371 MCCUNE #102, EL PASO, TX 79915
#5-14	LH-240Z	SIDNEY H FULLER	4016 COLUMBUS STREET, DETROIT, MI 48204

PREL 'NARY LINE LIST- PIRKEY POWI PLANT

TRACT	LEASE	NAME	ADDRESS
#5-15	N/A	SWPCO	P O BOX 21106, SHREVEPORT, LA 71156
#5-16	LH-120	AUSTRALIA SMITH HARRIS	P O BOX 534, CLARKSVILLE, TX 75426
#5-16	LH-120	BRENDA G BRYANT	1008 EAST CHAFFIN ST, SHERMAN, TX 75090-6202
#5-18	LH-87G	JESSE WASHINGTON JR	573 MADISON AVENUE, AKRON, OH 44320
#5-27	N/A	SWPCO	P O BOX 21106, SHREVEPORT, LA 71156
#5-29	LH-106C	RITA WASHINGTON PHILLIPS	805 N FRANKLIN, MARSHALL, TX 75670
#5-29	LH-106G	FREDDIE COLLINS	17302 STOUT, DETROIT, MI 48219
#5-29	LH-106I	HELEN RISER	2000 RANDOLPH, MARSHALL, TX 75670
#5-29	LH-106J	LUBERTHA SNODDY	1114 BIRDSONG, LONGVIEW, TX 75602
#5-29	LH-106K	LONNIE JOE COLLINS	17302 STOUT, DETROIT, MI 48219
#5-29	LH-106M	FLORA BELL FACIANE	10530 CRENSHAW BLVD #4, INGLEWOOD, CA 90303
#5-29	LH-106N	HELEN RISER	2000 RANDOLPH, MARSHALL, TX 75670
#5-30	LH-105A	ROBERT LEE FISHER	12950 QUEENSBURY, HOUSTON, TX 77017
#5-30	LH-105B	BRANDY ADKINS	8430 ANTOINE DR #291, HOUSTON, TX 77088
#5-30	LH-105B	BRETT K WILLIAMS	20619 OAK LIMB LANE, HUMBLE, TX 77338
#5-30	LH-105B	CALVIN HENRY ADKINS	1117 EDWARDS STREET, HOUSTON, TX 77007
#5-30	LH-105B	DENISE ADKINS RAINEY	1305 GAZANIA CIRCLE, RIVERSIDE, CA 92501
#5-30	LH-105B	DENNIS ADKINS	1305 GAZANIA CIRCLE, RIVERSIDE, CA 92501
#5-30	LH-105B	DONALD ADKINS	1305 GAZANIA CIRCLE, RIVERSIDE, CA 92501
#5-30	LH-105B	FAITH K DANIELS	20619 OAK LIMB LANE, HUMBLE, TX 77338
#5-30	LH-105B	GERALDINE ADKINS	8430 ANTOINE DR #291, HOUSTON, TX 77088
#5-30	LH-105B	HARRIET ADKINS WILLIAMS	5300 COKE ST #68, HOUSTON, TX 77020
#5-30	LH-105B	HORATIO ADKINS	635 E 121ST STREET, LOS ANGELES, CA 90059
#5-30	LH-105B	JOSEPH EARL ADKINS	1512 GALE, HOUSTON, TX 77060
#5-30	LH-105B	KEITH RENARD ADKINS	1117 EDWARDS STREET, HOUSTON, TX 77007
#5-30	LH-105B	LAMONT E WILLIAMS	20619 OAK LIMB LANE, HUMBLE, TX 77338
#5-30	LH-105B	LATONYA PRUITT	3000 STONE HOGAN CONNECT #M-12, Atlanta, GA 30331
#5-30	LH-105B	LYNN MARIE ADKINS STEPHENS	6603 HIRSCH RD #115, HOUSTON, TX 77026
#5-30	LH-105B	RACHEL ADKINS HOWARD	4121 EAST KRESS St, HOUSTON, TX 77026
#5-30	LH-105B	WILMA JEAN MOSS	13106 CHAPMAN AVE #4218, GARDEN GROVE, CA 92840
#5-31	LH-93	ANN RICHARDSON TALLEY	P O BOX 358, HALLSVILLE, TX 75650
#5-31	LH-93	CAROL RICHARDSON GREER	P O BOX 464, HALLSVILLE, TX 75650
#5-31	LH-93	ELIZABETH BROWN SCHROTT	P O BOX 44, HALLSVILLE, TX 75650
#5-31	LH-93	MARTHA BROWN ROGERS	15067 FM 968 W, LONGVIEW, TX 75602
#5-31	LH-93	REAGAN MARK BROWN	5205 ASPEN, BELLAIRE, TX 77401
#5-31	LH-93	THOMAS LAMAR BROWN	P O BOX 3034, ET STATION, COMMERCE, TX 75428
#5-31	LH-93	THOMAS RICHARDSON	P O BOX 83, HALLSVILLE, TX 75650
#5-32	LH-131A	ANNETTE FIELDS MITCHELL	401 DUNBAR AVE, PORT ARTHUR, TX 77640
#5-32	LH-131A	CALVIN HAYWOOD FIELDS JR	5450 BROADMOOR PLAZA, INDIANAPOLIS, IN 46208
#5-32	LH-131A	GLORIA FIELDS JONES	3210 ASHLOCK DR, HOUSTON, TX 77082
#5-32	LH-131A	JEAN FIELDS MARSHALL	15067 FM 968 W, LONGVIEW, TX 75602
#5-32	LH-131A	NELVA RUTH CRAIN	2704 PARK DR, MARSHALL, TX 75670
#5-32	LH-131A	TANYA MICHELLE FIELDS	5450 BROADMOOR PLAZA, INDIANAPOLIS, IN 46208
#5-32	LH-131B	ANNETTE FIELDS MITCHELL	401 DUNBAR AVE, PORT ARTHUR, TX 77640
#5-32	LH-131B	BOBBIE J FIELDS WHITE	8927 MLK, HOUSTON, TX 77033
#5-32	LH-131B	CALVIN HAYWOOD FIELDS JR	5450 BROADMOOR PLAZA, INDIANAPOLIS, IN 46208
#5-32	LH-131B	DELORES YVONNE WISE	3813 SEIBER AVE, DAYTON, OH 45405
#5-32	LH-131B	DOMINICK L WISE	3813 SEIBER AVE, DAYTON, OH 45405
#5-32	LH-131B	GLORIA FIELDS JONES	3210 ASHLOCK DR, HOUSTON, TX 77082
#5-32	LH-131B	INEZ FIELDS DAVIS	1019 E RICHMOND AVE, FORT WORTH, TX 76104
#5-32	LH-131B	JEAN FIELDS MARSHALL	15067 FM 968 W, LONGVIEW, TX 75602
#5-32	LH-131B	JUANITA FIELDS BROWN	1721 FLORIN RD, SACRAMENTO, CA 95822
#5-32	LH-131B	LEO B SMITH	1102 ALVIN STREET, MARSHALL, TX 75670
#5-32	LH-131B	NAAMAN W FIELDS	1535 NORTH AVENUE, SACRAMENTO, CA 95838
#5-32	LH-131B	NELVA RUTH CRAIN	2704 PARK DR, MARSHALL, TX 75670
#5-32	LH-131B	RACHEL LOUISE FIELDS	773 E 52ND PL, LOS ANGELES, CA 90011
#5-32	LH-131B	RAYMOND L FIELDS JR	773 E 52ND PL, LOS ANGELES, CA 90011

PREL 'NARY LINE LIST-PIRKEY POW PLANT

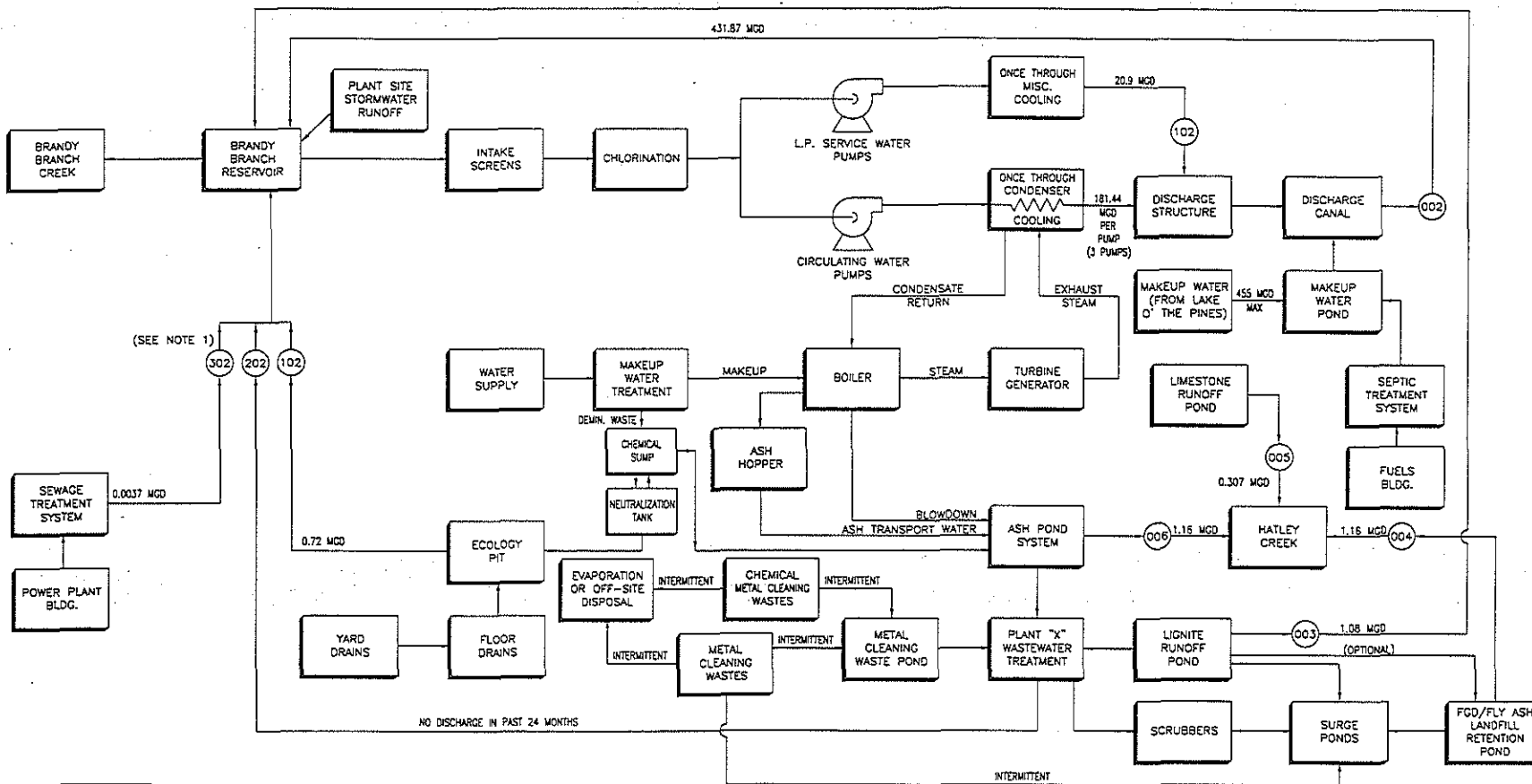
TRACT	LEASE	NAME	ADDRESS
#5-32	LH-131B	RETINA P SMITH	P O BOX 214884, DALLAS, TX 75221
#5-32	LH-131B	ROLAND H BOARD	4131 FREE PIKE #24, DAYTON, OH 45416
#5-32	LH-131B	SANDRA JOHNSON	2606 UNIVERSITY AVE, MARSHALL, TX 75670
#5-32	LH-131B	SHARON R SMITH-BOOKER	P O BOX 8187, MARSHALL, TX 75670
#5-32	LH-131B	TANYA MICHELLE FIELDS	5450 BROADMOOR PLAZA, INDIANAPOLIS, IN 46208
#5-32	LH-131B	THEODORE G SMITH JR	9200 RED OAK RD, HALLSVILLE, TX 75650-7690
#5-32	LH-131B	VIRGIA B SMITH	2600 EVANS ST, MARSHALL, TX 75670
#5-32	LH-131B	WENDELL D FIELDS	773 E 52ND PL, LOS ANGELES, CA 90011
#5-32	LH-131B	WILLIA RUTH CLEMENTS	1102 ALVIN ST, MARSHALL, TX 75670
#5-32	LH-131I	BOBBIE J FIELDS WHITE	8927 MLK, HOUSTON, TX 77033
#5-32	LH-131I	DELORES YVONNE WISE	3813 SEIBER AVE, DAYTON, OH 45405
#5-32	LH-131I	DOMINICK L WISE	3813 SEIBER AVE, DAYTON, OH 45405
#5-32	LH-131I	INEZ FIELDS DAVIS	1019 E RICHMOND AVE, FORT WORTH, TX 76104
#5-32	LH-131I	JUANITA FIELDS BROWN	1721 FLORIN RD, SACRAMENTO, CA 95822
#5-32	LH-131I	LEO B SMITH	1102 ALVIN STREET, MARSHALL, TX 75670
#5-32	LH-131I	NAAMAN W. FIELDS	1535 NORTH AVENUE, SACRAMENTO, CA 95838
#5-32	LH-131I	RACHEL LOUISE FIELDS	773 E 52ND PL, LOS ANGELES, CA 90011
#5-32	LH-131I	RAYMOND L FIELDS JR	773 E 52ND PL, LOS ANGELES, CA 90011
#5-32	LH-131I	RETINA P SMITH	P O BOX 214884, DALLAS, TX 75221
#5-32	LH-131I	ROLAND H BOARD	4131 FREE PIKE #24, DAYTON, OH 45416
#5-32	LH-131I	SANDRA JOHNSON	2606 UNIVERSITY AVE., MARSHALL, TX 75670
#5-32	LH-131I	SHARON R SMITH-BOOKER	P O BOX 8187, MARSHALL, TX 75670
#5-32	LH-131I	THEODORE G SMITH JR	9200 RED OAK RD, HALLSVILLE, TX 75650-7690
#5-32	LH-131I	VIRGIA B SMITH	2600 EVANS ST, MARSHALL, TX 75670
#5-32	LH-131I	WENDELL D FIELDS	773 E 52ND PL, LOS ANGELES, CA 90011
#5-32	LH-131I	WILLIA RUTH CLEMENTS	1102 ALVIN STREET, MARSHALL, TX 75670
#5-44	N/A	SWPCO	P O BOX 21106, SHREVEPORT, LA 71156
#5-55	N/A	SWPCO	P O BOX 21106, SHREVEPORT, LA 71156
#5-56	N/A	SWPCO	P O BOX 21106, SHREVEPORT, LA 71156
#10-7	LH	WILLIE WALKER EST	RT 1, BOX 340, LONGVIEW, TX 75602
#10-7	LH-131AA	CORA HESTER	10330 LA SALLE, LOS ANGELES, CA 90047
#10-7	LH-131BB	TIMOTHY HESTER	10330 LA SALLE, LOS ANGELES, CA 90047
#10-7	LH-131DD	LUCY FORD WALKER	5518 EASTLAND ST, HOUSTON, TX 77028
#10-7	LH-131E	BELLEZORA HOUTMAN	3046 GREELEY ST, SAN DIEGO, CA 92113
#10-7	LH-131EE	WILLIE WALKER	741 EUCLID #207, DETROIT, MI 48202
#10-7	LH-131HH	LOUIS WALKER	1566 E. 48TH ST, LOS ANGELES, CA 90011
#10-7	LH-131II	HARRISON COUNTY CLERK	HARRISON COUNTY COURTHOUSE, MARSHALL, TX 75670
#10-7	LH-131L	JOHN RICHARD DILLARD	1456 SERENADE LN, DALLAS, TX 75241
#10-7	LH-131N	FREDERICK DILLARD	RT 2, BOX 196, HALLSVILLE, TX 75650
#10-7	LH-131P	LACY KIRK JOHNSON	2210 DUGALD PL, DALLAS, TX 75216-3308
#10-7	LH-131S	BERNICE WALKER DUDLEY	RT 4, BOX 643, MINDEN, LA 71055
#10-7	LH-131V	OVIDIA STURNS WASHINGTON	189 DOCTORS RD W, LONGVIEW, TX 75602-7243
#10-7	LH-131W	LULA WALKER PATRICK	RT 2, BOX 167, MARSHALL, TX 75670
#10-7	LH-131Y	ESTER R HARPER	760 N BRIERWOOD, RIALTO, CA 92376
#10-7	LH-131Y	NETTIE MAE KEMP JACKSON	713 AZALEA LN, CEDAR HILL, TX 75104
#10-7	LH-131ZZZZ	BEATRICE WALKER EST	(NO ADDRESS LISTED)
#10-7	LH-131ZZZZ	ISAAC MORRIS	(NO ADDRESS LISTED)
#10-7	LH-97X	HARRISON COUNTY CLERK	HARRISON COUNTY COURTHOUSE, MARSHALL, TX 75670
#10-8	N/A	SWPCO	P O BOX 21106, SHREVEPORT, LA 71156
#10-9	N/A	SWPCO	P O BOX 21106, SHREVEPORT, LA 71156
#1071-049	NL	VERGIA B SMITH	2600 EVANS ST, MARSHALL, TX 75670
#1071-053	NL	CLARENCE DON PECK	3 CEDAR HILL RD, LONGVIEW, TX 75601
#1071-054	N/A	SWPCO	P O BOX 21106, SHREVEPORT, LA 71156
#1071-063	MSL-139	HARVEY AND EDNA FINKLEA	2400 W GRAND AVE, MARSHALL, TX 75670
#1071-087	NL	NAPOLEON & THEOLA JOHNSON	6424 EMBASSY DR, FT WORTH, TX 76119
#1071-090	N/A	SWPCO	P O BOX 21106, SHREVEPORT, LA 71156

ATTACHMENT C

FACILITY MAP

ATTACHMENT D

SCHEMATIC OF WATER FLOW



NOTE: 1. GRAB SAMPLES OF TREATED SEWAGE FROM THE POWER PLANT AND FUELS BUILDINGS HAVE HISTORICALLY BEEN PHYSICALLY COMPOSITED INTO A SINGLE FLOW WEIGHTED SAMPLE FOR ANALYSIS AND REPORTING.

ENGINEERED BY:				CONT./PROJ. No.		SWEPCO		 1616 Woodall Rodgers Fwy Dallas, TX 75202
DRAWN BY:				DATE:		HENRY W. PIRKEY POWER PLANT		
APPROVED BY:				SCALE:		SCHEMATIC OF WATER FLOW		
REV				DESCRIPTION		DATE		

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO AEP PRO SERV, INC. IT IS SUBMITTED IN CONFIDENCE AND IS TO BE USED SOLELY FOR THE PURPOSES FOR WHICH IT IS FURNISHED. THIS DRAWING AND SUCH INFORMATION IS NOT TO BE REPRODUCED, TRANSMITTED, DISCLOSED OR USED OTHERWISE IN WHOLE OR IN PART WITHOUT THE WRITTEN AUTHORIZATION OF AEP PRO SERV, INC.

DATE: 7-26-02

SCALE: NONE

DWG. NO. SWP-07

KEY

REVIEW

SECTION BY:

ATTACHMENT E

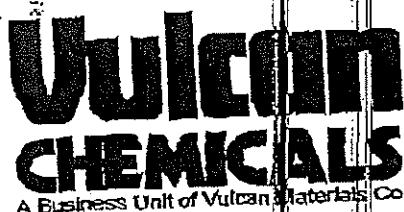
MSDS AND SUMMARY

SUMMARY PAGE FOR MSDS SHEETS

<u>Manufacturer</u>	<u>Trade Name</u>	<u>Common Name</u>	<u>Description</u>
Brenntag (Vulcan Chemicals)	Chlorine Gas	Chlorine	Gaseous Chlorine for Microbiological control
Brenntag (Georgia-Pacific Corp)	Sodium Hypochlorite	Hypochlorite	Liquid Chlorine for Microbiological control
Betz Laboratories Inc	Powerline 1200P	Hydroquinone	Oxygen Scavenger/Metal Passivator solution
Brenntag (Shrieve Chemical Co.)	Sulfuric Acid	Sulfuric Acid	Demineralizer Water Treatment (pH Control)
Gulf Coast Chemical Commercial, Inc.	Sodium Phosphate Tribasic	Trisodium Phosphate	Water Treatment Dispersant
Fisher Scientific Chemical Division	Sodium Hydroxide (Beads)	Caustic Soda	Water Treatment (pH adjustment)
Brenntag (Dow Chemical USA)	Sodium Hydroxide Liquid	Caustic Soda	Water Treatment (pH adjustment)
Fisher Scientific Chemical Division	Sulfuric Acid	Sulfuric Acid	Water Treatment (pH adjustment)
Betz Industrial, Inc	OPTI-MEEN-85218	OPTI-MEEN	Water Treatment for Macro-invertebrate growth
Betz Laboratories, Inc	Betz Polymer CDP-90192	Polymer	Coagulant
Gulf Coast Chemical Commercial, Inc.	Sodium Phosphate Dibasic	Disodium Phosphate	Boiler Water Treatment
Gulf Coast Chemical Commercial, Inc.	Potassium Phosphate Dibasic	Potassium Phosphate	Boiler Water Treatment
Gulf Coast Chemical Commercial, Inc.	Polymer 577	Polymer	Flocculant
Fini Enterprises (FE-3), Inc	Ferric Sulfate Solution	Ferric Sulfate	Precipitating agent

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918-273-2



MATERIAL SAFETY DATA SHEET

24 Hour Emergency Phone 316/524-5751

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
ChlorineCHEMICAL NAME
ChlorineSYNONYM IS
Liquid ChlorineMANUFACTURER
Vulcan Chemicals, P O Box 385015, Birmingham, AL 35238-5015

SECTION 2 COMPOSITION INFORMATION ON INGREDIENTS

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>% RANGE</u>	<u>OSHA PEL</u>
* Chlorine	7782-50-6	100	1.0 ppm Ceiling

* Denotes chemical subject to reporting requirements of Section 312 of Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA) and 40 CFR Part 372.

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

A greenish-yellow gas or amber liquid with a pungent odor

DANGER! Liquefied, nonflammable gas under pressure

May be fatal if inhaled. Causes severe burns. Corrosive to eyes, skin and mucous membranes in presence of moisture. Harmful if absorbed through skin.

POTENTIAL HEALTH EFFECTS

INHALATION

Inhalation is the major potential route of exposure. Chlorine is a respiratory irritant. Chlorine is irritating and can be corrosive to the eyes, skin, and mucous membranes. Symptoms of exposure include burning of eyes, nose, and mouth. Other symptoms of overexposure can include nausea, vomiting, dizziness, shortness of breath and chest pain. Exposures to higher concentrations can cause unconsciousness and death. Pulmonary edema and chemical pneumonia can develop and may occur hours after exposure.

SKIN

Liquid contact can cause local irritation and burns. Chlorine vapors can cause irritation, burning and blisters.

EYE

Liquid contact can cause irritation and burns. Vapor concentrations of 1 ppm can cause redness, tearing and irritation of eyes.

INGESTION

Chlorine is gas at room temperature. Ingested liquid chlorine can cause severe burns of mouth, esophagus and stomach. Nausea and vomiting are likely to occur.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Asthma, bronchitis, emphysema and other lung diseases, and chronic nose, sinus or throat conditions.



MATERIAL SAFETY DATA SHEET

Chlorine

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Page 2 of 7

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY
Smokers may be more sensitive to respiratory effects of chlorine.

CHRONIC EFFECTS
Chlorine is not listed on the IARC, NTP or OSHA carcinogen lists.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove to fresh air until symptoms disappear. If breathing remains difficult, administer oxygen and contact a physician immediately. If breathing stops, start artificial respiration and call for emergency assistance immediately. Keep patient warm and at rest.

SKIN

Remove contaminated clothing and shoes. Wash exposed area thoroughly with large quantities of water for at least 15 minutes. Wash contaminated clothing before reuse.

EYES

Flush eyes immediately with water for at least 15 minutes, periodically lifting the upper and lower eyelids. Call a physician at once if irritation of the eyes, skin or other body surfaces persists.

INGESTION

Do not induce vomiting. If person is conscious, give water or milk and contact physician immediately. Do not give anything by mouth if unconscious.

NOTES TO PHYSICIAN

Monitor closely for delayed onset of pulmonary edema and chemical pneumonia. Provide treatment as is medically indicated.

See Section 11 for Toxicological Information

SECTION 5 FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT

None

AUTOIGNITION TEMPERATURE

N/A

FLAMMABLE LIMITS IN AIR (PERCENT BY VOLUME)

Nonflammable but does support combustion.

HAZARDOUS COMBUSTION PRODUCTS

Nonflammable, but is a strong oxidizer. Most combustibles will burn in chlorine forming toxic gasses.

EXTINGUISHING MEDIA

Nonflammable, use agent suitable for surrounding fire.

FIRE FIGHTING INSTRUCTIONS

Approach fire from upwind. If no chlorine is escaping, apply water spray to keep fire-exposed containers cool. Do not apply water to leaking containers. Remove chlorine containers from fire zone if possible. Extinguish fire using agent suitable for surrounding fire. Flame impingement on steel chlorine container will result in iron/chlorine fire causing rupture of the container.

Firefighters should wear self-contained, positive-pressure breathing apparatus, and a one piece, total-encapsulating suit of Butyl coated nylon or equivalent.

**MATERIAL SAFETY DATA SHEET**

Chlorine

7/27/01

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SECTION 6 ACCIDENTAL RELEASE MEASURES

Evacuate unprotected personnel upwind or crosswind for at least 200 feet (300 feet for large spills) out of danger area. Wear one-piece, total encapsulating suit of Butyl coated nylon or equivalent with self-contained breathing apparatus. Isolate leak to whatever extent possible. If a chlorine container is leaking, try to position it so that gas rather than liquid leaks; apply emergency kit device if possible. For other than minor leaks, immediately implement predetermined emergency plan. Call CHEMTREC or supplier when help is needed.

Notify National Response Center (800/424-8802) of uncontained releases to the environment in excess of the RQ. See Section 15 for regulatory information.

SECTION 7 HANDLING AND STORAGE**HANDLING**

Avoid contact with skin and avoid breathing vapors. Use only with adequate ventilation. Do not get in eyes or on skin or on clothing. Wash thoroughly after handling. Do not eat, drink, or smoke in work area. Wash hands prior to eating, drinking, or using restroom. Any clothing or shoes which become contaminated with chlorine should be removed immediately and thoroughly laundered before wearing again.

Do not attempt to handle, store, or use chlorine without complete review of The Chlorine Institute's *Chlorine Manual*. Any use as a pesticide must be in a manner consistent with the labeling.

Follow protective controls set forth in Section 8 when handling this product. Vapors are heavier than air and will collect in low areas. Do not enter confined spaces such as tanks or pits without following proper entry procedures as required by 29 CFR 1910.146.

STORAGE**STORAGE CONDITIONS**

Keep away from heat and open flame. Store properly labeled containers in a cool, dry, well-ventilated area away from incompatible materials (See Section 10) and away from basements, pits, etc. Isolate from acetylene, ammonia, hydrogen, hydrocarbons, ether, turpentine, and finely divided metals. Make daily inspections for leaks. Room vents should be located at floor level. Do not apply heat to a chlorine container. Do not remove or deface label or tags.

Chlorine piping and equipment must be thoroughly cleaned of organics and moisture before use. Keep chlorine piping and handling equipment clean and dry. Liquid chlorine lines must have suitable expansion chambers between block valves due to the high coefficient of expansion.

INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT

Titanium will react violently with dry chlorine. Dry chlorine will also react with aluminum and tin. Moist chlorine will react with most metals. Stainless steel can fail due to chloride ion stress corrosion cracking if used in the presence of moisture.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION**ENGINEERING CONTROLS****VENTILATION**

As necessary to maintain vapor concentrations below 1 ppm, at all times.

PERSONAL PROTECTIVE EQUIPMENT**EYE AND FACE PROTECTION**

Wear safety glasses. Contact lenses should not be worn. Chemical goggles should be worn when operating valves and connecting or disconnecting chlorine lines.

**MATERIAL SAFETY DATA SHEET**

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Page 4 of 7**SKIN PROTECTION**

Wear cotton or leather gloves during normal operations to avoid freeze burns.

RESPIRATORY PROTECTION

Where vapor concentration exceeds or is likely to exceed 0.5 ppm, a NIOSH approved full face chlorine type respirator is acceptable. A NIOSH approved self-contained breathing apparatus, with full facepiece, is required for vapor concentrations above 10 ppm and for leaks and/or emergencies. Follow any applicable respirator use standards and regulations.

GENERAL

Protective equipment and clothing should be selected, used, and maintained according to applicable standards and regulations. For further information, contact the clothing or equipment manufacturer or the Vulcan Chemicals Technical Service Department.

EXPOSURE GUIDELINES

ACGIH: 0.5 ppm (8 hr) TWA, 1 ppm STEL
OSHA: 1.0 ppm Ceiling

IMMEDIATELY DANGEROUS TO LIFE OR HEALTH
10 ppm

ODOR THRESHOLD

Odor threshold approximately 0.3 ppm - highly variable especially with individuals routinely exposed.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

CHEMICAL FORMULA
 Cl_2

MOLECULAR WEIGHT
70.91

APPEARANCE AND ODOR
Greenish-yellow gas, amber liquid;
pungent odor

SPECIFIC GRAVITY
Liquid = 1.467 @ 0°C

VAPOR PRESSURE
71 psig @ 60°F

VOLATILES, PERCENT BY VOLUME
100

BOILING POINT
-29.32°F (-34.07°C)

VAPOR DENSITY
2.5 (Air = 1)

EVAPORATION RATE
Not Applicable

SOLUBILITY IN WATER
Slight

SECTION 10 STABILITY AND REACTIVITY

CHEMICAL STABILITY
Stable

CONDITIONS TO AVOID

Dry chlorine is highly reactive with titanium and tin. Reacts with most metals at high temperatures. Reacts with water to produce hydrochloric and hydrochlorous acids, which are corrosive to most metals.

INCOMPATIBILITY WITH OTHER MATERIALS

Ammonia, elemental metals, certain metal hydrides, carbides, nitrides, oxides, phosphides and sulfides, easily oxidized materials, organic materials (e.g. petrochemicals, oils, greases) and unstable and reactive compounds.

**MATERIAL SAFETY DATA SHEET**

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HAZARDOUS DECOMPOSITION PRODUCTS

Will not decompose.

HAZARDOUS POLYMERIZATION

Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION**ACUTE TOXICITY****INHALATION**

Concentrations of 5-6 ppm can cause irritation of the nose and mucous membrane of the upper respiratory tract followed by headache and coughing. 10 ppm can cause severe irritation of respiratory tract with 15-20 ppm causing intense cough. Exposures to concentrations above 25 ppm can cause unconsciousness and death.

Exposures to humans to .5 ppm for 8 hours and 1 ppm for 4 hours have caused transient decreased pulmonary capacity, as measured by pulmonary function tests. In persons exposed to acute, non-lethal levels, decreased pulmonary capacity is followed by a gradual return to normal. In some cases long lasting effects have been observed.

ANIMAL TOXICOLOGYInhalation LC₅₀: 293 ppm - 1 hour (rat)Inhalation LC₅₀: 137 ppm - 1 hour (mouse)**CHRONIC TOXICITY**

Numerous studies have been conducted to determine the potential chlorine has to cause chronic effects. In rats exposed to concentrations up to 10 ppm for 6 hours a day, 5 days a week for 6 weeks, decreases in body weight and inflammation of the respiratory tract were observed. At exposures of 3 and 8 ppm, changes in the liver and kidneys were also noted. Rabbits and guinea pigs exposed to 1.7 ppm for 9 months showed weight loss and a decreased resistance to disease.

No adverse effects were observed in rabbits and guinea pigs at levels of .7 ppm. Guinea pigs exposed to 1.6 ppm for 5 hours a day, for 42 days and injected with tuberculosis (bacteria) displayed shorter life cycles, than those exposed to just one of the agents. Rats with pulmonary disease showed an increased response to chlorine. Rhesus monkeys exposed to concentrations up to 2.3 ppm for 6 hours a day, 5 days a week for one year did not exhibit any signs of chronic toxicity, except for eye irritation.

A study of 600 diaphragm cell workers from 25 plants with an average duration of exposure of 11 years exposed to .006 to 1.42 ppm, showed no statistically significant increase in abnormal chest x-rays, EKGs or pulmonary function tests.

CARCINOGENICITY

One study has been conducted to evaluate chlorine's ability to cause cancer in experimental animals. Seven generations of rats were exposed by ingestion to highly chlorinated water daily (100 mg/liter). No increased incidences of tumors were observed.

Chlorine is not listed on the IARC, NTP or OSHA carcinogen lists.

REPRODUCTIVE TOXICITY

Two studies have been conducted to assess the ability of chlorine to cause reproductive effects. Rabbits exposed by inhalation to concentrations up to 1.5 ppm and rats exposed by ingestion to highly chlorinated drinking water daily for seven generations did not display any adverse reproductive effects.

**MATERIAL SAFETY DATA SHEET**

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SECTION 12 ECOLOGICAL INFORMATION**ENVIRONMENTAL FATE:**

Water: Chlorine is a strong oxidizer and will react rapidly with inorganic compounds. Chlorine will also oxidize organic compounds, but at a slower rate than inorganic compounds. The presence of light accelerates the dissipation of chlorine in water.

ECOTOXICITYAcute LC₅₀ (96 Hours) for Fathead Minnow:

0.07 - 0.15 ppm

Acute LC₅₀ (96 Hours) for Bluegill:

0.44 mg/l.

SECTION 13 DISPOSAL CONSIDERATIONS

All disposals of this material must be done in accordance with local, state and Federal regulations. Waste characterization and compliance with disposal regulations are the responsibilities of the waste generator.

SPILL RESIDUES

Chlorine gas will disperse to the atmosphere leaving no residue. Chlorine may be neutralized by introducing it into caustic soda, sodalash, or hydrated lime. Liquid and/or solid residues from neutralization must be disposed of in a permitted waste management facility. Consult federal, state, or local disposal authorities for approved procedures.

SECTION 14 TRANSPORT INFORMATION**DOT IDENTIFICATION NO.**

UN 1017

DOT SHIPPING DESCRIPTION (49 CFR 172.101)

Chlorine, 2.3, Poison Gas, UN 1017, RQ

Poison-Inhalation Hazard, Hazard Zone B, Marine Pollutant

PLACARD REQUIRED

Poison Gas, 1017, Class 2

LABEL REQUIRED

Poison Gas, Class 2, Corrosive

Label as required by OSHA Hazard Communication Standard, and any applicable state and local regulations.

IMO REQUIREMENTS

EmS No.: 2-08

MFAS Table No.: 740 Marine Pollutant IMDG Code Page: 2116

SECTION 15 REGULATORY INFORMATION**U S FEDERAL REGULATIONS****REPORTABLE QUANTITY (RQ)**

Reportable Quantity (RQ) is 10 lbs.

TOXIC SUBSTANCES CONTROL ACT

Listed on TSCA Inventory

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) TITLE III

Components identified with an asterisk (*) in Section 2 are subject to the reporting requirements of Section 313 of Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA) and 40 CFR Part 372.



MATERIAL SAFETY DATA SHEET

Chlorine

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SARA HAZARD CATEGORIES (40 CFR 370.2)

HEALTH: Immediate Health PHYSICAL: Fire, Sudden Release of Pressure

INTERNATIONAL REGULATIONS

CANADA

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) CLASSIFICATION

WHMIS Classifications applicable to this product:

A (Compressed Gas) based on vapor pressure

C (Oxidizing Material)

D-1A (Very Toxic Material) based on inhalation toxicity.

E (Corrosive Material) based on assignment to TDG Class 2, Division 4

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

All components of this product are on the Domestic Substances List (DSL).

HAZARDOUS PRODUCTS ACT

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR).

EUROPE

EINECS No.: 231-559-5

STATE REGULATIONS

CALIFORNIA PROPOSITION 65

Chlorine does not appear on the California Proposition 65 list.

SECTION 16 OTHER INFORMATION

NFPA RATINGS

Health 4; Flammability 0; Reactivity 0; OX

Medical Emergencies:

Call collect 24 hours a day
for emergency toxicological
information: 415/821-3182

Other Emergency Information:

Call 316/524-6751 (24 Hours)

For any other information contact:

Vulcan Chemicals

Technical Service Department

P.O. Box 385015

Birmingham, AL 35238-5015

800/873-4898

8 AM - 1 PM Central Time

Monday through Friday

NOTICE: Vulcan Chemicals believes the information contained herein is accurate; however, Vulcan Chemicals makes no guarantees with respect to such accuracy and assumes no liability in connection with the use of the information contained herein by any party. The provision of the information contained herein and the provision of information by or reliance on Vulcan's Technical Services Department is not intended to be and should not be construed as legal advice or as ensuring compliance with any federal, state or local laws and regulations. Any party using this product should review all such laws, rules or regulations prior to use.

NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

Date of Preparation: July 27, 2001

FORM 5239-310

Thursday, July 18, 2002

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Sodium Hypochlorite 10% sol.
DOCUMENT IDENTIFIER: 449500
SYNONYMS: Liquid bleach
CHEMICAL FAMILY NAME: Inorganic, salt
NFPA HAZARD RATINGS (H-F-R): 2-0-1
HMIS HAZARD RATINGS (H-F-R): 2-0-1
DISTRIBUTOR: Brenntag Southwest, Inc.
IN CASE OF EMERGENCY CALL: 1-800-424-9300

MSDS PREPARED BY: Brenntag Southwest, Inc.
610 Fisher Road
Longview, TX 75604
(903) 759-7151

2. COMPOSITION INFORMATION ON INGREDIENTS

INGREDIENTS	CAS NUMBERS	Percent
Sodium Hypochlorite	007681-52-9	10

Remainder consists of non-hazardous and/or other ingredients below reportable levels.
Trace impurities and additional material names not listed above may also appear in the Regulatory Information Section (Section 15) towards the end of the MSDS.
These materials may be listed for local "Right to Know" compliance and for other reasons.

3. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! Oxidizer! May cause burns to skin and eyes.
May be harmful if swallowed or inhaled.

POTENTIAL HEALTH EFFECTS:

Thursday, July 18, 2002

SKIN CONTACT: May cause moderate to severe irritation consisting of discomfort, itching, reddening and swelling.
Contact with the skin can cause chemical burns.

SKIN ABSORPTION: No data available

EYES: Contact with the eyes causes redness, tearing, and blurred vision.
May cause burns to eyes.

INGESTION: Ingestion causes pain and inflammation of the mouth, gastrointestinal tract, and erosion of the mucous membranes.

INHALATION: Inhalation may cause irritation, burning sensation, coughing, wheezing, laryngitis, shortness of breath, or headache.
May cause lung damage/edema.

MEDICAL CONDITIONS AGGRAVATED:
No data available

This product does not contain any chemicals reportable under California Proposition 65.
Components found on one of the OSHA designated carcinogen lists are listed below.

INGREDIENT	NTP	IARC	OSHA
Sodium Hypochlorite	N	N	N

4. FIRST AID MEASURES

SKIN CONTACT: Remove contaminated clothing and shoes.
Wash exposed areas with soap and water.
Call a physician if irritation persists.

EYE CONTACT: Flush eyes with water for at least 15 minutes.
Get immediate medical attention.

INGESTION: Do not induce vomiting. Give 1-2 glasses of water to dilute. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.
Do not give anything by mouth to an unconscious person.
Get immediate medical attention.

INHALATION: Remove to fresh air.
If breathing has stopped, give artificial respiration.
Get immediate medical attention.

NOTES TO PHYSICIAN: No data available

5. FIRE FIGHTING MEASURES

Tuesday, July 18, 2002

FIRE AND EXPLOSIVE PROPERTIES

FLASH POINT:	Not applicable °F
FLASH POINT:	Not applicable °C
FLASH POINT METHOD:	Not applicable
LOWER FLAMMABILITY LIMIT:	Not available
UPPER FLAMMABILITY LIMIT:	Not available
AUTOIGNITION TEMPERATURE:	Not available °F, Not available °C
FLAMMABILITY CLASSIFICATION:	Not applicable
EXTING. MEDIA:	This product is not flammable. Use extinguishing media for surrounding fire.
FIRE FIGHTING:	Use water spray to disperse vapors and to provide protection for persons attempting to stop leak. Cool fire-exposed containers with water spray.
PROTECTIVE EQUIPMENT:	Use NIOSH-approved self-contained breathing apparatus and complete protective clothing when fighting chemical fires.
FIRE HAZARDS:	Closed containers of this product may explode when exposed to excessive heat. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Avoid contact with combustible materials. May ignite or explode on contact with combustible materials.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILLS:	Contain spill and ventilate area. Absorb on inert media and containerize for disposal.
LARGE SPILLS:	Contain spill and ventilate area. Permit only trained personnel wearing full protective equipment to enter the spill area. Collect the spill in a waste container or remove with a vacuum truck. Prevent spill from entering natural watercourses.

PROTECTIVE EQUIPMENT\ SPILL-RELEASE INSTRUCTIONS:

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Do not use combustible absorbents. Wear complete protective clothing when cleaning up chemical spills. Spills and releases may have to be reported to federal and/or local authorities. See the Regulatory Information section (section 14) regarding reporting requirements.

7. HANDLING AND STORAGE

HANDLING: Avoid contact with skin, eyes, and clothing.
Avoid breathing product vapors and mists.
Do not take internally.
Wash thoroughly after handling this material.
Use this material only with adequate ventilation.

STORAGE: Keep container closed when not in use.
This material should be stored in a dry, cool place. Store in well-ventilated areas and at moderate temperatures.
Protect against physical damage.
The empty container is hazardous.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Good general ventilation (typically 10 air changes/hour) should be used. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

SKIN: Wear protective gloves made of neoprene or rubber.

EYE: Wear chemical safety goggles.

RESPIRATORY: If engineering controls do not maintain airborne concentrations below recommended limits, wear a NIOSH-approved respirator for dusts and mists.

OTHER: Emergency showers, eyewash stations, and fire blankets should be accessible. Wear protective clothing.

EXPOSURE GUIDELINES:

INGREDIENT

ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
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Wednesday, July 18, 2002

Sodium Hypochlorite

N/EST N/EST N/EST N/EST

N/EST = Not established

See 29 CFR 1910.1000 (D) (2) and ACGIH "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices" booklet (Appendix C) for the determination of exposure limits for mixtures. Consult an industrial hygienist or similar professional to confirm that the calculated exposure limits are appropriate.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
APPEARANCE	Clear, pale yellow or green
ODOR	Chlorine
SPECIFIC GRAVITY:	1.2
SOLUBILITY (IN WATER):	Complete
BOILING POINT (°F):	Not available
BOILING POINT (°C):	Not available
FREEZING POINT (°F):	Not available
FREEZING POINT (°C):	Not available
MELTING POINT (°F):	Not available
MELTING POINT (°C):	Not available
PRODUCT pH:	12-13
VAPOR PRESSURE:	17.5 @ 20 C
REFERENCE PRESSURE:	mm Hg
VAPOR DENSITY:	Not available
EVAPORATION RATE:	Not available
VISCOSITY:	Not available
% VOLATILES:	Not available

10. STABILITY AND REACTIVITY

STABILITY:	Stable
CONDITIONS TO AVOID:	Exposure to high temperatures should be

Thursday, July 19, 2002

INCOMPATIBILITY:

minimized.

Combustible materials

Acids

Amines

Reducing agents

Metals

DECOMPOSITION:

Oxides of chlorine

**POLYMERIZATION WILL
OCCUR:**

No

11. TOXICOLOGICAL INFORMATION**IMMEDIATE
EFFECTS:**

May cause burns to skin and eyes. May be harmful if swallowed or inhaled. Irritation data: 10 mg eyes-rabbit moderate. Toxicity data: 1 gm/kg oral-woman TD Lo; 45 mg/kg intravenous-man TD Lo; 5800 mg/kg oral-mouse LD50; 140 mg/kg/9 weeks continuous-rat TD Lo.

CARCINOGENICITY: No data available**MUTAGENICITY:**

Mutation in microorganisms-Salmonella typhimurium 1 mg/plate (-S9); DNA repair-Escherichia coli 20 ug/disc; DNA damage-Escherichia coli 420 u/no/L; phage inhibition capacity-Escherichia coli 103 ug/well; micronucleus test-non-mammalian species multiple 200 ppb; cytogenetic analysis-non-mammalian species multi 120 ug/L; cytogenetic analysis-human lymphocyte 100 ppm 24 hours; sister chromatid exchange-human embryo 149 ng/L; cytogenetic analysis-hamster lung 100 mg/L.

EPIDEMIOLOGY: No data available**TERATOGENICITY:** No data available**REPRODUCTIVITY:** No data available**NEUROTOXICITY:** No data available**12. ECOLOGICAL INFORMATION**

Ecotoxicity Data: Fish toxicity: 94.0 ug/L 96 hours LC50 (mortality) Cutthroat trout (*Oncorhynchus clarki*). Invertebrate toxicity: 31.6 ug/L 7 hours IC50 (species diversity) Protozoan phylum (Protozoa). Algal toxicity: 90 ug/L 96 hours LC50 (mortality) Algae, phytoplankton, algal mat (Algae). Phytotoxicity: 230 ug/L 35 hours (biomass) Curles pondweed (*Potamogeton crispus*). Other toxicity: 2.1 ug/L 28 days (chlorophyll) Aquatic community (Aquatic community).

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13. DISPOSAL CONSIDERATIONS**RCRA
WASTE:**

Yes

**RCRA ID
NUMBER:**

D002 (If pH >12.5)

**VOC
CONTENT
(lbs/gal):**

Not applicable

**Waste
Disposal
Procedure:**

Discharge, treatment, or disposal may be subject to Federal, State, or Local laws. State and Local regulations and restrictions are complex and may differ from Federal disposal regulation. The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA Classification and the proper disposal method.

14. TRANSPORTATION INFORMATION**D.O.T. SHIPPING NAME:**

Hypochlorite solutions (Sodium Hypochlorite)

D.O.T. HAZARD CLASS:

Class 8, No division Corrosive materials

DOT ID NUMBER:

UN 1791

DOT PACKING GROUP:

III

DOT RQ (lbs):

1000

CONTRIBUTING CHEMICAL: Sodium Hypochlorite**OTHER:**

Labels required: Corrosive

MARINE POLLUTANT:

No

OTHER REGULATORY INFORMATION**IMDG HAZARD CLASS:** 8 - Corrosive materials**ICAO HAZARD CLASS:** 8 - Corrosive**15. REGULATORY INFORMATION****FEDERAL REGULATIONS**

Thursday, July 19, 2002

TSCA (Toxic Substance Control Act):

Yes

SECTION 311/312 HAZARD CLASS:

Immediate (acute) health hazard

SARA TITLE III (Superfund Amendments and Reauthorization Act):

<u>INGREDIENTS</u>	<u>CAS NUMBERS</u>	<u>Section 313</u>	<u>Section 302</u>
Sodium Hypochlorite	007681-52-9	N	N

WHMIS CLASSIFICATION
(CANADA):

Class E

FOREIGN INVENTORY:

EINECS (European Inventory of Existing
Commercial Chemical Substances)
Canadian DSL (Domestic Substances List)STATE RIGHT TO KNOWCALIFORNIA PROP 65

This product does not contain any chemicals reportable under California Proposition 65.

MASSACHUSETTS SUBSTANCE LIST:

Sodium Hypochlorite

NEW JERSEY SUBSTANCE LIST:

Sodium Hypochlorite

PENNSYLVANIA HAZARDOUS SUBSTANCE
LIST:

Sodium Hypochlorite

16. OTHER INFORMATION

CREATION DATE: 10/10/1997

BETZ LABORATORIES, INC.
4636 SOMERTON ROAD, TREVOSE, PA. 19053
BETZ MATERIAL SAFETY DATA SHEET
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) 800-877-1940

PRODUCT : POWERLINE 1200P

(PAGE 1 OF 3)
EFFECTIVE DATE 12-27-91
PRINTED: 27-Dec-1991

REVISIONS TO SECTIONS: 4;EDIT:2

PRODUCT APPLICATION : WATER BASED DISSOLVED OXYGEN SCAVENGER/METAL PASSIVATOR.
-----SECTION 1-----HAZARDOUS INGREDIENTS-----
INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC
PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS
LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE
AND CHRONIC HAZARDS OF THIS FORMULATION.

HYDROQUINONE (1,4-BENZENEDIOL) ***CAS#123-31-9; POTENTIAL SKIN SENSITIZER; EYE
IRRITANT; TOXIC (ORAL INGESTION); PEL: 2MG/M3; TLV: 2MG/M3.

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

Wt. AS IS (APPROX.)	7.5	ODOR: SLIGHT
ML.PT. (DEG.F): >200	SETA (CC)	SP.GR. (70F) OR DENSITY: 1.005
VAPOR PRESSURE (mmHG): 18		VAPOR DENSITY (AIR=1): <1
VISC cps 70F: 3		% SOLUBILITY (WATER): 100
WAP. RATE: <1	ETHER=1	APPEARANCE: BROWN
PHYSICAL STATE: LIQUID		FREEZE POINT (DEG.F): 32

-----SECTION 3-----REACTIVITY DATA-----

STABLE. MAY REACT WITH STRONG OXIDIZERS. DO NOT CONTAMINATE. BETZ TANK
CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: POWERLINE 1200P

-----SECTION 4-----HEALTH HAZARD EFFECTS-----

CUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE

SLIGHTLY IRRITATING TO THE SKIN.POTENTIAL SKIN SENSITIZER

SEVERE EYE EFFECTS ***

MODERATELY IRRITATING TO THE EYES

CUTE RESPIRATORY EFFECTS ***

MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***

PROLONGED OR REPEATED EXPOSURES MAY CAUSE BLOOD CELL DAMAGE OR IMPAIR BLOOD CELL FUNCTION.

MEDICAL CONDITIONS AGGRAVATED ***

NOT KNOWN

SYMPTOMS OF EXPOSURE ***

PROLONGED, REPEATED EXPOSURE MAY RESULT IN BROWNISH DISCOLORATION OF THE CONJUNCTIVA AND CHANGES IN THE CORNEA WHICH MAY LEAD TO DECREASED VISUAL ACUITY.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS ***

MAY BE TOXIC IF ORALLY INGESTED.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT***

REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT***

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***

REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION***

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM DILUTE CONTENTS OF STOMACH.INDUCE VOMITING BY ONE OF THE STANDARD METHODS.IMMEDIATELY CONTACT A PHYSICIAN

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

PILL INSTRUCTIONS***

VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS. FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS***

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY SEWER TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT PRODUCT(AS IS) -

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA: DRY CHEMICAL,CARBON DIOXIDE,FOAM OR WATER

BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: POWERLINE 1200P

---SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

FILTRATION PROTECTION***

ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS

COMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.

COMMENDED SKIN PROTECTION***

RUBBER GLOVES

WASH OFF AFTER EACH USE.REPLACE AS NECESSARY

COMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES

---SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

STORE WITH MINIMUM EXPOSURE TO LIGHT

HANDLING INSTRUCTIONS***

NORMAL CHEMICAL HANDLING

THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

..TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

GALLONS DUE TO HYDROQUINONE ← 4.8 9/9/04 S

..RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: NOT APPLICABLE

..DOT HAZARD/UN#/ER GUIDE# IS: NOT APPLICABLE

..CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

..SARA SECTION 302 CHEMICALS: HYDROQUINONE(123-31-9) ;

..SARA SECTION 313 CHEMICALS: HYDROQUINONE(123-31-9) , 2.0-5.0% ;

..SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE) AND DELAYED(CHRONIC)

..MICHIGAN CRITICAL MATERIALS: HYDROQUINONE(123-31-9) ;

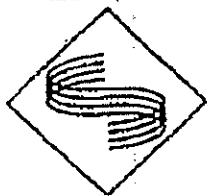
EPA/HMIS : HEALTH - 1 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B

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PAGE 1 OF 10

**Shrieve Chemical Company****Manufacturer's Safety Data Sheet****CHEMTREC****800-424-9300****24-HOUR EMERGENCY ASSISTANCE****800-367-4226**

SHRIEVE CHEMICAL COMPANY

800-367-4226

GENERAL MSDS ASSISTANCE

281-367-4226 ext.111

TECHNICAL MSDS ASSISTANCE

281-367-4226 ext.133

Rhodia

Material Safety Data Sheet**SULFURIC ACID**

Supersedes Date: 12/18/95

RHODIA INC.
ECO SERVICES
3 Enterprise Drive
Box 881
Shelton CT 06484

Emergency Phone Numbers:

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC (800-424-9300 within the United States or 703-527-3887 for international collect calls) or Rhodia CAERS (Communication and Emergency Response System) at 800-916-3232.

For Product Information:

(800) 642-4200

Chemical Name or Synonym:

SULFURIC ACID

Molecular Formula: H_2SO_4 **Component**

SULFURIC ACID
WATER

CAS Reg Number

7664-93-9

7732-18-5

OSHA Hazard

Y

N

Percentage

65 - 100

BALANCE

A. EMERGENCY OVERVIEW:

MSDS Page 1 of 10

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<http://www.shrieve.com>

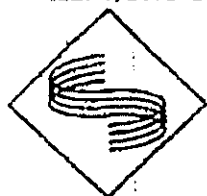
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Physical Appearance and Odor:
colorless oily liquid, odorless.

Warning Statements:

DANGER! CAUSES SEVERE BURNS. REACTS VIOLENTLY WITH WATER. CONTENTS MAY BE UNDER PRESSURE OF EXPLOSIVE, FLAMMABLE HYDROGEN GAS. HIGHLY REACTIVE AND CAPABLE OF IGNITING COMBUSTIBLE MATERIAL ON CONTACT.

B. POTENTIAL HEALTH EFFECTS:

Acute Eye:

Corrosive. Causes burns, tissue destruction, Can cause blindness.

Acute Skin:

Corrosive. Causes redness, inflammation, burns.

Acute Inhalation:

Harmful if inhaled. Causes upper respiratory tract irritation, lung irritation, chest pain, wheezing, shortness of breath, a burning sensation, tickling of the nose and throat, sneezing.

Acute Ingestion:

Harmful if ingested. Can cause irritation, abdominal pain, corrosion, burns to mouth and esophagus, death.

Chronic Effects:

This product contains ingredients that are considered to be probable or suspected human carcinogens (see Section 11 - Chronic).



FIRST AID MEASURES FOR ACCIDENTAL:

Eye Exposure:

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention.

Skin Exposure:

In case of contact, immediately wash with plenty of water for at least 15 minutes. Seek medical attention if irritation develops or persists. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use.

Inhalation:

Remove victim from immediate source of exposure and assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardio-pulmonary resuscitation). Seek medical attention.

Ingestion:

If victim is conscious and alert, give 2-3 glasses of water to drink and do not induce vomiting. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. Vomiting may occur spontaneously. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

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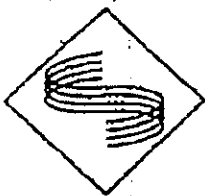
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Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

NOTES TO PHYSICIAN:

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

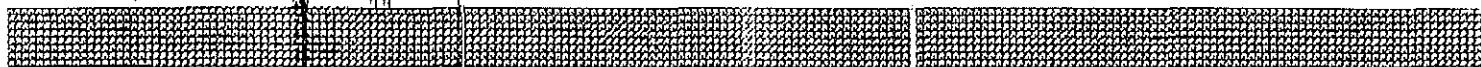
This material is an acid. The primary toxicity of this product is due to its irritant effects on mucous membranes.

INHALATION: If cough or shortness of breath occurs, evaluate the possibility of bronchitis or pneumonitis. Chest x-ray and arterial blood gases can be used to determine the presence of pulmonary edema. In severe cases, use of humidified oxygen and assisted ventilation including positive end expiratory pressure (PEEP) may be needed. Parenteral steroids may be useful in limiting the extent of pulmonary damage.

SKIN: Wash exposed area thoroughly with soap and water. Chemical burns from strong acids are generally treated the same as thermal burns.

EYES: Irrigate eyes for 15 minutes with sterile saline. If irritation, pain, swelling, photophobia or lacrimation persist, examination by an ophthalmologist is recommended.

INGESTION: If not already performed by first aid personnel, irrigate mouth with large amounts of water and dilute the acid by having victim drink 4 to 8 ounces of water or milk. DO NOT induce vomiting. Use of gastric lavage is controversial. The advantage of removal of acid must be weighed against the risk of perforation or bleeding. If a large amount of acid (> 1 ml/kg body weight) has been recently ingested, cautious gastric lavage is generally advised if the patient is alert and there is little risk of convulsions. Consultation with a gastroenterologist and/or surgeon is advised. Serious complications such as perforation or stricture of the esophagus may occur requiring care by specialists. Laryngeal edema may develop, requiring intubation or tracheostomy.

**FIRE HAZARD DATA:****Flash Point:**

Not Applicable

Extinguishing Media:

Not combustible. Use extinguishing method suitable for surrounding fire. Recommended (small fires): dry chemical.

Special Fire Fighting Procedures:

Firefighters should wear NIOSH/MSHA approved positive pressure breathing apparatus with full face-piece and full acid-resistant protective clothing. Fight fire from maximum distance.

Unusual Fire and Explosion Hazards:

Not combustible. Strong oxidizers can react with reducing agents or combustibles producing heat and causing ignition. Reacts violently with water releasing heat and corrosive material.

Hazardous Decomposition Materials (Under Fire Conditions):

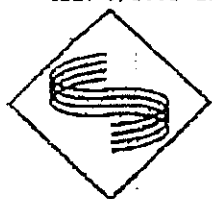
oxides of sulfur

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Shrieve Chemical Company
Manufacturer's Safety Data Sheet

CHEMTREC**800-424-9300****24-HOUR EMERGENCY ASSISTANCE****800-367-4226****SHRIEVE CHEMICAL COMPANY****800-367-4226****GENERAL MSDS ASSISTANCE****281-67-4226 ext. 111****TECHNICAL MSDS ASSISTANCE****281-67-4226 ext. 133****ACCIDENTAL RELEASE MEASURES****Evacuation Procedures and Safety:**

Personnel handling this material should be thoroughly trained to handle spills and releases. Do not direct hose streams into an unignited transportation spill (tank truck or tank car).

Containment of Spill:

Stop leak if it can be done without risk. Dike spill using absorbent or impervious materials such as earth, sand or clay. Dike or retain dilution water or water from firefighting for later disposal.

Cleanup and Disposal of Spill:

Pump any free liquid into an appropriate closed container (see Section 7: Handling and Storage). Exercise caution during neutralization as considerable heat may be generated. Carefully neutralize spill with soda ash. Absorb neutralized spill with an inert absorbent. Scrape up and place in appropriate closed container (see Section 7: Handling and Storage).

Environmental and Regulatory Reporting:

Do not flush to drain. Runoff from fire control or dilution water may cause pollution. Dispose of as a hazardous waste. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies. Large spills should be handled according to a predetermined plan. For assistance in developing a plan contact the Technical Service Department using the Product Information phone number in Section 1.

Minimum/Maximum Storage Temperatures:

> -36 C (-33 F)

Handling:

Do not breathe vapors and mists. Do not get on skin or in eyes. This product reacts violently with bases liberating heat and causing spattering.

When diluting an acid, ALWAYS add the acid slowly to water and stir well to avoid spattering. NEVER ADD WATER TO ACID.

Storage:

Store in tightly closed containers. Store in an area that is dry, well-ventilated, diked with impermeable material.

Introductory Remarks:

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment

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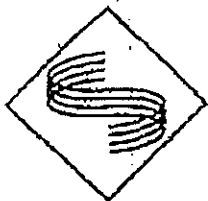
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CHEMTREC**800-424-9300****24-HOUR EMERGENCY ASSISTANCE****800-367-4226**

SHRIEVE CHEMICAL COMPANY
GENERAL MSDS ASSISTANCE
TECHNICAL MSDS ASSISTANCE

800-367-4226
281-467-4226 ext.111
281-467-4226 ext.133

manufacturers.

Exposure Guidelines:

Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

SULFURIC ACID

	Notes	TWA	STEL
ACGIH		1 mg/cu m	3 mg/cu m
OSHA		1 mg/cu m	

Engineering Controls:

Where engineering controls are indicated by use conditions or a potential for extensive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: local exhaust ventilation at the point of generation.

Respiratory Protection:

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA, WHMIS or ANSI standard(s): Air-purifying (half-mask/full-face) respirator with cartridges/canister approved for use against acid gases.

Eye/Face Protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area.

Skin Protection:

Skin contact must be prevented through the use of permeation resistant clothing, gloves and footwear, selected with regard for use conditions and exposure potential. An emergency shower must be readily accessible to the work area. Consideration must be given both to durability as well as permeation resistance.

Work Practice Controls:

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes of contact with this material.



Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product

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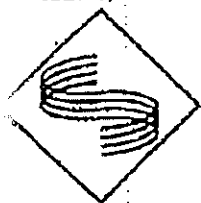
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**Shrieve Chemical Company
Manufacturer's Safety Data Sheet****CHEMTREC****800-424-9300****24-HOUR EMERGENCY ASSISTANCE****800-367-4226****SHRIEVE CHEMICAL COMPANY****800-367-4226****GENERAL MEDS ASSISTANCE****281-467-4226 ext.111****TECHNICAL MEDS ASSISTANCE****281-467-4226 ext.133**

Information phone number in Section 1 for its exact specifications.

Physical Appearance:

Colorless oily liquid.

Odor:

Odorless.

H:

at 1 wt/wt%.

Specific Gravity:

Not Available

Density:

1.6 to 1.8 g/ml at 25 C (77 F).

Water Solubility:

Miscible

Melting Point Range:

Not Available

Freezing Point Range:

-36 to -28 C (-33 to -18 F)

Boiling Point Range:

151 to 276 C (304 to 529 F) at 760 mmHg

Vapor Pressure:

1 to 0 mmHg at 40 C (104 F)

Vapor Density:

3.4

Molecular Weight:

98.08

Chemical Stability:

This material is stable under normal handling and storage conditions described in Section 7.

Conditions To Be Avoided:

none known

Materials/Chemicals To Be Avoided:

water

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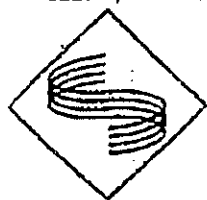
2002 '81 281-467-4226

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**Shrieve Chemical Company**
Manufacturer's Safety Data Sheet**CHEMTREC****800-424-9300****24-HOUR EMERGENCY ASSISTANCE****800-367-4226****SHRIEVE CHEMICAL COMPANY**
GENERAL MSDS ASSISTANCE
TECHNICAL MSDS ASSISTANCE**800-367-4226**
281-67-4226 ext.111
281-67-4226 ext.133

strong reducing agents
halogens
bases
metals
nitrogen compounds

Decomposition Temperature Range:
340 C (644 F)

The Following Hazardous Decomposition Products Might Be Expected:

Decomposition Type: thermal
oxides of sulfur

Hazardous: Polymerization Will Not Occur.

Avoid The Following To Inhibit Hazardous Polymerization:
not applicable

Acute Eye Irritation:**Toxicological Information and Interpretation:**

eye - eye irritation, 250 ug/24 hr, rabbit. Severely irritating.

Acute Skin Irritation:

No test data found for product. This product was not tested because strong acids are known to be corrosive and to cause severe tissue destruction.

Acute Dermal Toxicity:

No test data found for product. This product was not tested because strong acids are known to be corrosive and to cause severe tissue destruction.

Acute Respiratory Irritation:**Toxicological Information and Interpretation:**

lung - lung irritation, < 5 mg/cu m, human. Mildly irritating.

Acute Inhalation Toxicity:**Toxicological Information and Interpretation:**

LC50 - lethal concentration 50% of test species, 510 mg/cu m/2 hr, rat.

LC50 - lethal concentration 50% of test species, 347 ppm/1 hr, rat.

Acute Oral Toxicity:**Toxicological Information and Interpretation:**

LD50 - lethal dose 50% of test species, 2140 mg/kg, rat.

Chronic Toxicity:

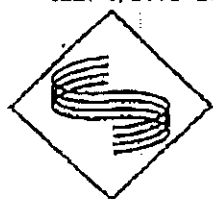
This product contains the substances that are considered to be "probable" or "suspected" human carcinogens as follows:

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Manufacturer's Safety Data Sheet

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SHRIEVE CHEMICAL COMPANY

800-367-4226

GENERAL MSDS ASSISTANCE

281-367-4226 ext. 111

TECHNICAL MSDS ASSISTANCE

281-367-4226 ext. 133

Ingredient Name

SULFURIC ACID

OCCUPATIONAL EXPOSURES TO STRONG-INORGANIC-ACID
MISTS CONTAINING**Regulatory Agency Listing Carcinogen**

OSHA	IARC	NTP	ACGIH
No	No	No	A2
No	1	No	A2

The International Agency for Research on Cancer (IARC) has classified strong inorganic acid mists containing sulfuric acid as a known human carcinogen (IARC Category 1). This classification applies only to sulfuric acid when it is generated as a mist. There is still debate in the scientific community whether the studies reviewed by IARC adequately controlled for confounding occupational exposures and personal habits such as cigarette smoking and alcohol consumption. A few epidemiology studies have suggested a possible association between sulfuric acid exposure and laryngeal or lung cancer; however, in all these studies, workers were exposed to many other chemicals, some of which are recognized carcinogens, such as diethylsulfate and nickel. Considering the multiple chemical exposures and other limitations of the studies, we disagree with IARC's conclusion that a cause and effect relationship between cancer and exposure to strong inorganic acid mist containing sulfuric acid has been demonstrated.

Ecotoxicological Information:**Ecotoxicological Information and Interpretation:**

The toxicity of sulfuric acid to fish is dependent on the resulting pH of the water. Lethality at a pH of 5.0 or below, required to cause lethality varies depending on the hardness of the water (hard water has some buffering capacity) and the species of fish (some fish are more resistant to the effects of acidity). McKee, JE, and Wolf, HA (Editors), Water Quality Criteria, 2nd ed., Publication No. 3-A, p. 279, California State Water Resources Control Board, Sacramento, CA (rev. 1963).

Chemical Fate Information:

No data found for product.

Waste Disposal Method:

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

EPA Hazardous Waste - YES**EPA RCRA HAZARDOUS WASTE CODES:**

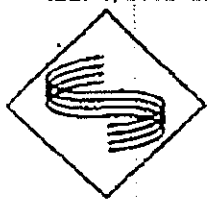
"C" Corrosive; "R" Reactive

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Transportation Status: IMPORTANT! Statements below provide additional data on listed DOT classification.

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

US Department of Transportation

Hazard Class..... 8

Shipping Name:

SULFURIC ACID

ID Number..... UN1830

Packing Group.... II

Labels..... CORROSIVE

Emergency Guide #.... 137

Inventory Status**Inventory**

UNITED STATES (TSCA)

CANADA (DSL)

EUROPE (EINECS/ELINCS)

AUSTRALIA (AICS)

JAPAN (MITI)

SOUTH KOREA (KECL)

Status

Y

Y

Y

Y

Y

Y

Y = All ingredients are on the inventory.

E = All ingredients are on the inventory or exempt from listing.

P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

FEDERAL REGULATIONS**Inventory Issues:**

All functional components of this product are listed on the TSCA Inventory.

SARA Title III Hazard Classes:

Fire Hazard

- NO

Reactive Hazard

- YES

Release of Pressure

- NO

Acute Health Hazard

- YES

Chronic Health Hazard

- NO

SARA 313 Chemicals

SULFURIC ACID (65 - 100%)

SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Ingredient

SULFURIC ACID

CERCLA/SARA RQ

1000 lbs

SARA EHS TPQ

1000 lbs

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<http://www.shrieve.com>

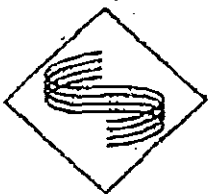
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Shrieve Chemical Company
Manufacturer's Safety Data Sheet

CHEMTREC**800-424-9300****24-HOUR EMERGENCY ASSISTANCE****800-367-4226****SHRIEVE CHEMICAL COMPANY****800-367-4226****GENERAL MSDS ASSISTANCE****281-367-4226 ext.111****TECHNICAL MSDS ASSISTANCE****281-367-4226 ext.133**

UNLISTED HAZARDOUS WASTES - CHARACTERISTIC OF CORROSIVITY 100 lbs

UNLISTED HAZARDOUS WASTES - CHARACTERISTIC OF REACTIVITY 100 lbs

STATE REGULATIONS:

This product does not contain any components that are regulated under California Proposition 65.

National Fire Protection Association Hazard Ratings-NFPA(R):

- 3 Health Hazard Rating-Serious
- 0 Flammability Rating-Minimal
- 2 Instability Rating-Moderate
- 0 * NO WATER

National Paint & Coating Hazardous Materials Identification System-HMIS(R):

- 3 Health Hazard Rating-Serious
- 0 Flammability Rating-Minimal
- 2 Reactivity Rating-Moderate

MATERIAL SAFETY DATA SHEET

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: SODIUM PHOSPHATE TRIBASIC, DODECAHYDRATE

PRODUCT DESCRIPTION:

DATE PREPARED: 15 April 1989

EMERGENCY PHONE - 24 HOURS: CALL CHEM-TEL, INC. (800) 255-3824

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	WT. %	OSHA PEL	ACGIH TLV	CAS REGISTRY#
SODIUM PHOSPHATE TRIBASIC, DODECAHYDRATE				10101-88-0

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: CORROSIVE! CAUSES BURNS.

POTENTIAL HEALTH EFFECTS

INHALATION: HARMFUL IF SWALLOWED. MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCCOUS MEMBRANE AND UPPER RESPIRATORY TRACT.

EYE CONTACT: HARMFUL. CAUSES BURNS. MATERIAL IS EXTREMELY DESTRUCTIVE.

SKIN CONTACT: HARMFUL WHEN ABSORBED THROUGH SKIN.

INGESTION: HARMFUL IF SWALLOWED. MATERIAL EXTREMELY DESTRUCTIVE.

CHRONIC: N/A

• IN ALL CASES CONTACT PHYSICIAN.

HMIS HAZARD CODE: HEALTH: FLAMMABILITY:0 REACTIVITY:

SECTION 4 FIRST AID MEASURES

INHALATION: IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. SEEK MEDICAL ADVICE.

EYE CONTACT: IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. CALL A PHYSICIAN.

SKIN CONTACT: IMMEDIATELY FLUSH SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. WASH CONTAMINATED CLOTHES BEFORE REUSE.

INGESTION: IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.

SECTION 5 FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: N/A)

FLAMMABLE LIMITS LFL.....N/A UFL.....N/A

LFL.....N/A UEL.....N/A

GENERAL HAZARD.....N/A

FIRE FIGHTING INSTRUCTIONS.....

FIRE FIGHTING EQUIPMENT.....

HAZARDOUS COMBUSTION PRODUCTS...

USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6 ACCIDENTAL RELEASE MEASURES

LAND SPILL WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES. SWEEP-UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL. AVOID RAISING DUST. VENTILATE AREA AND WASH APLL SITE AFTER MATERIAL PICKUP IS COMPLETE.

WATER SPILL: N/A

SECTION 7 HANDLING AND STORAGE

STORAGE TEMPERATURE: AMBIENT
STORAGE PRESSURE: ATMOSPHERIC
GENERAL: WASH THOROUGHLY AFTER HANDLING. KEEP TIGHTLY CLOSED. STORE IN A COOL DRY PLACE.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING CONTROLS
VENTILATION: MECHANICAL

PERSONAL PROTECTION

RESPIRATOR: WEAR APPROPRIATE NIOSH/MSHA APPROVED RESPIRATOR.
PROTECTIVE CLOTHING: CHEMICAL RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE:	TO WATER	VAPOR DENSITY:	TO WATER
SPECIFIC GRAVITY.....	1.620	(air=1)	
SOLUBILITY IN WATER.....	N/A	EVAPORATION RATE.....	TO WATER
pH.....	N/A	(n-Butyl Acetate=1)	
BOILING POINT.....	N/A	FREEZING POINT.....	N/A
VISCOSITY.....	N/A	ODOR.....	N/A
APPEARANCE.....	WHITE CRYSTALS		
PHYSICAL STATE.....	N/A		

SECTION 10 STABILITY AND REACTIVITY

GENERAL: N/A
INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID: STRONG ACIDS.
HAZARDOUS DECOMPOSITION: NATURE OF DECOMBUSTION PRODUCTS NOT KNOWN.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE EFFECTS: HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT, EYES AND SKIN. INHALATION MAY BE FATAL AS A RESULT OF SPASM, INFLAMMATION AND EDEMA SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND VOMITING. TO THE BEST OF OUR KNOWLEDGE THE CHEMICAL, PHYSICAL AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY TESTED.

SECTION 12 ECOLOGICAL INFORMATION

NO DATA AVAILABLE

SECTION 13 DISPOSAL CONSIDERATIONS

FOR SMALL QUANTITIES: CAUTIOUSLY ADD TO A LARGE STIRRED EXCESS OF WATER. ADJUST THE PH TO NEUTRAL, SEPARATE ANY INSOLUBLE SOLIDS OR LIQUIDS AND PACKAGE THEM FOR HAZARDOUS WASTE DISPOSAL. FLUSH THE AQUEOUS SOLUTION DOWN THE DRAIN WITH PLENTY OF WATER. THE HYDROLYSIS AND NEUTRALIZATION REACTIONS REACTIONS MAY GENERATE HEAT AND FUMES WHICH CAN BE CONTROLLED BY THE RATE OF ADDITION. FOLLOW LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION 14 TRANSPORT INFORMATION

DOT (Department Of Transportation)

PROPER SHIPPING NAME: N/A
UN NUMBER: N/A
HAZARD CLASS: N/A
PACKING GROUP: N/A

EMERGENCY PHONE - 24 HOURS: CALL CHEM-TEL, INC. (800) 255-3924

SECTION 15 REGULATORY INFORMATION

EUROPEAN INFORMATION: CAUTION: SUBSTANCE NOT YET FULLY TESTED. CORROSIVE. CAUSES BURNS. IN CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE. TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. WEAR SUITABLE PROTECTIVE CLOTHING. DO NOT BREATHE DUST.

SECTION 16 OTHER INFORMATION

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SODIUM HYDROXIDE, DRY SOLID, FLAKE, BEAD, OR GRANULAR
SODIUM HYDROXIDE, DRY SOLID, FLAKE, BEAD, OR GRANULAR
SODIUM HYDROXIDE, DRY SOLID, FLAKE, BEAD, OR GRANULAR

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC
CHEMICAL DIVISION
1 REAGENT LANE
FAIR LAWN NJ 07410
(201) 796-7100

EMERGENCY NUMBER: (201) 796-7100
CHEMTREC ASSISTANCE: (800) 424-9300

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SUBSTANCE IDENTIFICATION

CAS-NUMBER 1310-73-2

SUBSTANCE: **SODIUM HYDROXIDE, DRY SOLID, FLAKE, BEAD, OR GRANULAR**

TRADE NAMES/SYNONYMS:

CAUSTIC SODA; SODA LYE; LYE; WHITE CAUSTIC; CAUSTIC SODA, BEAD;
CAUSTIC SODA, DRY; CAUSTIC SODA, FLAKE; CAUSTIC SODA, GRANULAR;
CAUSTIC SODA, SOLID; SODIUM HYDRATE; SODIUM HYDROXIDE (NA(OH));
SODIUM HYDROXIDE, FLAKE; SODIUM HYDROXIDE, DRY; SODIUM HYDROXIDE, SOLID;
ASCARITE; SODIUM HYDROXIDE; STCC 4935235; UN 1823;
S-318; S-318; S-320; S-612; BP359; NAOH; ACC21300

CHEMICAL FAMILY:
INORGANIC BASE

MOLECULAR FORMULA: NA-O-H

MOLECULAR WEIGHT: 40.00

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=0 REACTIVITY=1 PERSISTENCE=0
NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=0 REACTIVITY=1

COMPONENTS AND CONTAMINANTS

COMPONENT: SODIUM HYDROXIDE PERCENT: 100
CAS# 1310-73-2

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:

SODIUM HYDROXIDE:

2 MG/M3 OSHA CEILING
2 MG/M3 ACGIH CEILING
2 MG/M3 NIOSH RECOMMENDED CEILING
2 MG/M3 DFG MAK TWA (TOTAL DUST);
4 MG/M3 DFG MAK 5 MINUTE PEAK, MOMENTARY VALUE, 8 TIMES/SHIFT

MEASUREMENT METHOD: PARTICULATE FILTER; HYDROCHLORIC ACID; TITRATION;
(NIOSH VOL. III # 7401, ALKALINE DUSTS).

1000 POUNDS CERCLA SECTION 103 REPORTABLE QUANTITY

**OSHA LIMITS ADOPTED JANUARY 19, 1989 ARE SUBJECT TO THE DECISION OF THE
11TH CIRCUIT COURT OF APPEALS (AFL-CIO V. OSHA) AS OF JULY 7, 1992.**

PHYSICAL DATA

DESCRIPTION: ODORLESS, WHITE OR OFF-WHITE HYGROSCOPIC SOLID.

BOILING POINT: 2534 F (1390 C) MELTING POINT: 604 F (318 C)

SPECIFIC GRAVITY: 2.130 VAPOR PRESSURE: 100 MMHG @ 1111 C

PH: 14 @ 5% SOLUTION SOLUBILITY IN WATER: 111 %

SOLVENT SOLUBILITY: SOLUBLE IN ALCOHOL, GLYCEROL; INSOLUBLE ACETONE, ETHER.

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
NEGLECTIBLE FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

FIREFIGHTING MEDIA:

DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR REGULAR FOAM

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(1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR REGULAR FOAM
(1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FIREFIGHTING:

MOVE CONTAINER FROM FIRE AREA IF YOU CAN DO IT WITHOUT RISK. APPLY COOLING WATER TO SIDES OF CONTAINERS THAT ARE EXPOSED TO FLAMES UNTIL WELL AFTER FIRE IS OUT. STAY AWAY FROM ENDS OF TANKS (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5, GUIDE PAGE 60).

USE AGENT SUITABLE FOR TYPE OF FIRE, USE WATER IN FLOODING QUANTITIES AS FOG. APPLY WATER FROM AS FAR A DISTANCE AS POSSIBLE.

TRANSPORTATION DATA

DEPARTMENT OF TRANSPORTATION HAZARD CLASSIFICATION 49-CFR 172.101:
CORROSIVE MATERIAL

DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS 49-CFR 172.101 AND
SUBPART E:
CORROSIVE

DEPARTMENT OF TRANSPORTATION PACKAGING REQUIREMENTS: 49-CFR 173.245B
EXCEPTIONS: 49-CFR 173.244

FINAL RULE ON HAZARDOUS MATERIALS REGULATIONS (HMR, 49 CFR PARTS 171-180),
DOCKET NUMBERS HM-181, HM-181A, HM-181B, HM-181C, HM-181D AND HM-204,
EFFECTIVE DATE OCTOBER 1, 1991. HOWEVER, COMPLIANCE WITH THE REGULATIONS IS
AUTHORIZED ON AND AFTER JANUARY 1, 1991. (55 FR 52402, 12/21/90)

EXCEPT FOR EXPLOSIVES, INHALATION HAZARDS, AND INFECTIOUS SUBSTANCES, THE
EFFECTIVE DATE FOR HAZARD COMMUNICATION REQUIREMENTS IS EXTENDED TO
OCTOBER 1, 1993. (56 FR 47158, 09/18/91)

U.S. DEPARTMENT OF TRANSPORTATION SHIPPING NAME-ID NUMBER, 49 CFR 172.101:
SODIUM HYDROXIDE, SOLID-UN 1823

U.S. DEPARTMENT OF TRANSPORTATION HAZARD CLASS OR DIVISION, 49 CFR 172.101:
8 - CORROSIVE MATERIAL

U.S. DEPARTMENT OF TRANSPORTATION PACKING GROUP, 49 CFR 172.101:
PG II

U.S. DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS, 49 CFR 172.101
AND SUBPART E:
CORROSIVE

U.S. DEPARTMENT OF TRANSPORTATION PACKAGING AUTHORIZATIONS:

EXCEPTIONS: 49 CFR 173.154
NON-BULK PACKAGING: 49 CFR 173.212
BULK PACKAGING: 49 CFR 173.240

U.S. DEPARTMENT OF TRANSPORTATION QUANTITY LIMITATIONS 49 CFR 172.101:
PASSENGER AIRCRAFT OR RAILCAR: 15 KG
CARGO AIRCRAFT ONLY: 50 KG

TOXICITY

SODIUM HYDROXIDE:

IRRITATION DATA: 500 MG/24 HOURS SKIN-RABBIT SEVERE; 1% EYE-RABBIT SEVERE;
50 UG/24 HOURS EYE-RABBIT SEVERE; 1 MG/24 HOURS EYE-RABBIT SEVERE; 400 UG
EYE-RABBIT MILD; 1 MG/30 SECONDS RINSED EYE-RABBIT SEVERE; 1%/24 HOURS
EYE-MONKEY SEVERE

TOXICITY DATA: 1350 MG/KG SKIN-RABBIT LD50 (VAN WATERS & ROGERS INC. MSDS);
500 MG/KG ORAL-RABBIT LD01; 104-340 MG/KG ORAL-RAT LD50 (VAN WATERS & ROGERS
INC. MSDS); 40 MG/KG INTRAPERITONEAL-MOUSE LD50; MUTAGENIC DATA (RTECS).

CARCINOGEN STATUS: NONE

LOCAL EFFECTS: CORROSIVE- INHALATION, SKIN, EYE, INGESTION.
ACUTE TOXICITY LEVEL: TOXIC BY INGESTION; MODERATELY TOXIC BY DERMAL
ABSORPTION.

TARGET EFFECTS: NO DATA AVAILABLE.
AT INCREASED RISK FROM EXPOSURE: PERSONS WITH PRE-EXISTING SKIN AND EYE
CONDITIONS.

HEALTH EFFECTS AND FIRST AID

INHALATION:

SODIUM HYDROXIDE:

CORROSIVE, 250 MG/M3 IMMEDIATELY DANGEROUS TO LIFE OR HEALTH.

ACUTE EXPOSURE- EFFECTS DUE TO INHALATION OF DUSTS OR MIST MAY VARY FROM
MILD IRRITATION OF THE NOSE AT 2 MG/M3 TO SEVERE PNEUMONITIS DEPENDING
ON THE SEVERITY OF EXPOSURE. LOW CONCENTRATIONS MAY CAUSE MUCOUS MEMBRANE
IRRITATION WITH SORE THROAT, COUGHING, AND DYSPNEA. INTENSE EXPOSURES MAY
RESULT IN DESTRUCTION OF MUCOUS MEMBRANES AND DELAYED PULMONARY EDEMA
OR PNEUMONITIS. SHOCK MAY OCCUR.
CHRONIC EXPOSURE- PROLONGED EXPOSURES TO HIGH CONCENTRATIONS OF DUSTS OR

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MISTS MAY CAUSE DISCOMFORT AND ULCERATION OF THE NASAL PASSAGES. REPEATED EXPOSURES OF 5000 MG/L WERE HARMLESS TO RATS, BUT 10,000 MG/L LED TO NERVOUSNESS, SORE EYES, DIARRHEA AND RETARDED GROWTH. RATS EXPOSED 30 MINUTES/DAY TO UNMEASURED CONCENTRATIONS OF SODIUM HYDROXIDE AEROSOLS SUFFERED PULMONARY DAMAGE AFTER 2-3 MONTHS. DEATH OCCURRED IN 2 OF 10 RATS EXPOSED TO AN AEROSOL OF 40% AQUEOUS SODIUM HYDROXIDE FOR 30 MINUTES, TWICE A WEEK FOR 3 WEEKS. HISTOPATHOLOGICAL EXAMINATION SHOWED MOSTLY NORMAL LUNG TISSUE WITH FOCI OF ENLARGED ALVEOLAR SEPTAE, EMPHYSEMA, BRONCHIAL ULCERATION AND ENLARGED LYMPH-ADENOIDAL TISSUES. AN EPIDEMIOLOGIC STUDY OF 291 WORKERS CHRONICALLY EXPOSED TO CAUSTIC DUSTS FOR 30 YEARS OR MORE FOUND NO SIGNIFICANT INCREASE IN MORTALITY IN RELATION TO DURATION OR INTENSITY OF SUCH EXPOSURES.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. MAINTAIN AIRWAY AND BLOOD PRESSURE AND ADMINISTER OXYGEN IF AVAILABLE. KEEP AFFECTED PERSON WARM AND AT REST. TREAT SYMPTOMATICALLY AND SUPPORTIVELY. ADMINISTRATION OF OXYGEN SHOULD BE PERFORMED BY QUALIFIED PERSONNEL. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:
SODIUM HYDROXIDE:
CORROSIVE.

ACUTE EXPOSURE- UPON CONTACT WITH THE SKIN, DAMAGE INCLUDING REDNESS, CUTANEOUS BURNS, SKIN FISSURES AND WHITE ESCHARS MAY OCCUR WITHOUT IMMEDIATE PAIN. EXPOSURE TO SOLUTIONS AS WEAK AS 0.03 N (0.12%) FOR 1 HOUR HAS CAUSED INJURY TO HEALTHY SKIN. SOLUTIONS OF 25-50% CAUSED NO SENSATION OF IRRITATION WITHIN 3 MINUTES IN HUMAN SUBJECTS. WITH SOLUTIONS OF 0.4-4%, IRRITATION DOES NOT OCCUR UNTIL AFTER SEVERAL HOURS. SKIN BIOPSIES FROM HUMAN SUBJECTS HAVING 1 N SODIUM HYDROXIDE APPLIED TO THEIR ARMS FOR 15 TO 180 MINUTES SHOWED PROGRESSIVE CHANGES BEGINNING WITH DISSOLUTION OF THE CELLS IN THE HORNY LAYER AND PROGRESSING THROUGH EDEMA TO TOTAL DESTRUCTION OF THE EPIDERMIS IN 60 MINUTES. A 5% AQUEOUS SOLUTION CAUSED SEVERE NECROSIS TO THE SKIN OF RABBITS WHEN APPLIED FOR 4 HOURS. ALKALIES PENETRATE THE SKIN SLOWLY. THE EXTENT OF INJURY DEPENDS ON THE DURATION OF CONTACT. IF SODIUM HYDROXIDE IS NOT REMOVED FROM THE SKIN, SEVERE BURNS WITH DEEP ULCERATION MAY OCCUR. EXPOSURE TO THE DUST OR MIST MAY CAUSE MULTIPLE SMALL BURNS AND TEMPORARY LOSS OF HAIR. PATHOLOGIC FINDINGS DUE TO ALKALIES MAY INCLUDE GELATINOUS, NECROTIC AREAS AT THE SITE OF CONTACT.

CHRONIC EXPOSURE- EFFECTS ARE DEPENDENT UPON CONCENTRATION AND DURATION OF EXPOSURE. DERMATITIS OR EFFECTS SIMILAR TO THOSE FOR ACUTE EXPOSURE MAY OCCUR.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (AT LEAST 15-20 MINUTES). IN CASE OF CHEMICAL BURNS, COVER AREA WITH STERILE, DRY DRESSING, BANDAGE SECURELY, BUT NOT TOO TIGHTLY. GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:
SODIUM HYDROXIDE:
CORROSIVE.

ACUTE EXPOSURE- CONTACT MAY CAUSE DISINTEGRATION AND SLOUGHING OF CONJUNCTIVAL AND CORNEAL EPITHELIUM. CORNEAL OPACIFICATION, MARKED EDEMA AND ULCERATION, AFTER 7 TO 13 DAYS EITHER GRADUAL RECOVERY BEGINS OR THERE IS PROGRESSION OF ULCERATION AND CORNEAL OPACIFICATION. COMPLICATIONS OF SEVERE EYE BURNS ARE SYMBLEPHARON WITH OVERGROWTH OF THE CORNEA BY A VASCULARIZED MEMBRANE, PROGRESSIVE OR RECURRENT CORNEAL ULCERATION AND PERMANENT CORNEAL OPACIFICATION. BLINDNESS MAY OCCUR.

CHRONIC EXPOSURE- EFFECTS ARE DEPENDENT UPON CONCENTRATION AND DURATION OF EXPOSURE. CONJUNCTIVITIS OR EFFECTS SIMILAR TO THOSE FOR ACUTE EXPOSURE MAY OCCUR.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER. OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (AT LEAST 15-20 MINUTES). CONTINUE IRRIGATING WITH NORMAL SALINE UNTIL THE PH HAS RETURNED TO NORMAL (30-60 MINUTES). COVER WITH STERILE BANDAGES. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:
SODIUM HYDROXIDE:
CORROSIVE/TOXIC.

ACUTE EXPOSURE- THE REPORTED LETHAL DOSE IN RATS IS 140-340 MG/KG. INGESTION MAY CAUSE A BURNING SENSATION IN THE MOUTH, CORROSION OF THE LIPS, MOUTH, TONGUE AND PHARYNX, AND SEVERE ESOPHAGEAL AND ABDOMINAL PAIN. VOMITING OF BLOOD AND LARGE PIECES OF MUCOSA, AND BLOODY DIARRHEA. ASPHYXIA CAN OCCUR FROM SWELLING OF THE THROAT. MEDIASTINITIS, ALKALEMIA, PALOR, WEAK, SLOW PULSE, CARDIOVASCULAR COLLAPSE, SHOCK, COMA AND DEATH MAY OCCUR. PERFORATION OF THE ALIMENTARY TRACT AND CONSTRUCTIVE SCARRING MAY RESULT. ESOPHAGEAL STRICTURE MAY OCCUR WEEKS, MONTHS, OR EVEN YEARS LATER TO MAKE SWALLOWING DIFFICULT. THE ESTIMATED FATAL DOSE IN MAN IS 5 GRAMS. CASES OF SQUAMOUS CELL CARCINOMA OF THE ESOPHAGUS HAVE OCCURRED WITH LATENT PERIODS OF 12 TO 42 YEARS AFTER INGESTION. THESE CANCERS WERE BELIEVED TO BE SEQUELA OF TISSUE DESTRUCTION AND POSSIBLY SCAR FORMATION RATHER THAN THE RESULT OF DIRECT CARCINOGENIC ACTION OF SODIUM HYDROXIDE.

CHRONIC EXPOSURE- DEPENDING ON THE CONCENTRATION, REPEATED INGESTION OF ALKALINE SUBSTANCES MAY RESULT IN INFLAMMATORY AND ULCERATIVE EFFECTS ON THE ORAL MUCOUS MEMBRANES AND OTHER EFFECTS AS WITH ACUTE INGESTION.

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FIRST AID: DO NOT USE GASTRIC LAVAGE OR EMESIS. DILUTE THE ALKALI BY GIVING WATER OR MILK TO DRINK IMMEDIATELY AND ALLOWING VOMITING TO OCCUR. AS SOON AS POSSIBLE, HAVE QUALIFIED MEDICAL PERSONNEL DO ESOPHAGOSCOPY AND IRRIGATE INJURED AREAS WITH 1% ACETIC ACID UNTIL THE ALKALI IS COMPLETELY NEUTRALIZED. (OREISBACH, HANDBOOK OF POISONING, 11TH EDITION). GET MEDICAL ATTENTION IMMEDIATELY.

ANTIDOTE:
NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

REACTIVITY

REACTIVITY:
REACTS EXOTHERMICALLY WITH WATER.

INCOMPATIBILITIES:

SODIUM HYDROXIDE:
ACETALDEHYDE: MAY RESULT IN VIOLENT POLYMERIZATION.
ACETIC ACID: MIXING IN CLOSED CONTAINER INCREASES TEMPERATURE AND PRESSURE.
ACETIC ANHYDRIDE: MIXING IN A CLOSED CONTAINER INCREASES TEMPERATURE AND PRESSURE.
ACIDS: MAY REACT VIOLENTLY.
ACROLEIN: MAY RESULT IN AN EXTREMELY VIOLENT POLYMERIZATION.
ACRYLONITRILE: MAY CAUSE VIOLENT POLYMERIZATION.
ALLYL ALCOHOL + BENZENE SULFONYL CHLORIDE: POSSIBLE EXPLOSION HAZARD.
ALLYL CHLORIDE: HYDROLYZES.
ALUMINUM: VIGOROUS REACTION.
ALUMINUM, ARSENIC TRIOXIDE, SODIUM ARSENATE: MAY GENERATE FLAMMABLE HYDROGEN GAS.
AMMONIA + SILVER NITRATE: PRECIPITATION OF EXPLOSIVE SILVER NITRIDE MAY OCCUR.
AMMONIUM SALTS: MAY REACT VIOLENTLY EVOLVING AMMONIA GAS.
BENZENE-1,4-DIOL: EXOTHERMIC REACTION.
N,N'-BIS(1-HYDROXYETHYL)UREA: FORMATION OF EXPLOSIVE COMPOUND.
BROMINE: POSSIBLE EXPLOSION IF NOT STIRRED CONTINUOUSLY.
CHLORINE TRIFLUORIDE: MAY CAUSE VIOLENT REACTION.
CHLOROFORM + METHYL ALCOHOL: EXOTHERMIC REACTION.
CHLOROHYDRIN: MIXING IN A CLOSED CONTAINER CAUSES AN INCREASE IN TEMPERATURE AND PRESSURE.
4-CHLORO-2-METHYLPHENOL: POSSIBLE IGNITION.
CHLORONITROTOLUENES: POSSIBLE EXPLOSION.
CHLOROPICRIN: MAY CAUSE VIOLENT REACTION.
CHLOROSULFONIC ACID: MIXING IN A CLOSED CONTAINER CAUSES AN INCREASE IN TEMPERATURE AND PRESSURE.
CINNAMALDEHYDE: EXOTHERMIC REACTION.
COATINGS: MAY BE ATTACKED.
COPPER: SOLUTIONS MAY SLOWLY CORRODE.
CYANOGEN AZIDE: MAY FORM SODIUM 5-AZIDOTETRAZOLIDE, WHICH IS EXPLOSIVE IF ISOLATED.
2,2-DICHLORO-3,3-DIMETHYLBUTANE: HAZARDOUS REACTION.
1,2-DICHLOROETHYLENE: MAY FORM SPONTANEOUSLY FLAMMABLE MONOCHLOROACETYLENE.
DIBORANE AND OCTANAL OXIME: EXOTHERMIC REACTION.
ETHYLENE CYANOHYDRIN: MIXING IN A CLOSED CONTAINER CAUSES AN INCREASE IN TEMPERATURE AND PRESSURE.
FLAMMABLE LIQUIDS: FIRE AND EXPLOSION HAZARD.
GLYCOLS: MAY CAUSE EXOTHERMIC DECOMPOSITION WITH EVOLUTION OF HYDROGEN GAS.
GLYOXAL: MIXING IN A CLOSED CONTAINER INCREASES TEMPERATURE AND PRESSURE.
HALOGENATED HYDROCARBONS: VIOLENT REACTION.
HYDROCHLORIC ACID: MIXING IN A CLOSED CONTAINER CAUSES AN INCREASE IN TEMPERATURE AND PRESSURE.
HYDROFLUORIC ACID: MIXING IN A CLOSED CONTAINER CAUSES AN INCREASE IN TEMPERATURE AND PRESSURE.
HYDROQUINONE: RAPID DECOMPOSITION OF HYDROQUINONE WITH EVOLUTION OF HEAT.
IRON: SOLUTIONS MAY SLOWLY CORRODE.
LEAD: MAY BE ATTACKED; FLAMMABLE HYDROGEN GAS MAY BE LIBERATED.
LEATHER: MAY BE ATTACKED.
MALEIC ANHYDRIDE: EXPLOSIVE DECOMPOSITION.
METALS: CORRODES METALS, REACTING TO FORM FLAMMABLE HYDROGEN GAS.
4-METHYL-2-NITROPHENOL: EXOTHERMIC REACTION.
NITRIC ACID: MIXING IN CLOSED CONTAINER INCREASES TEMPERATURE AND PRESSURE.
NITROBENZENE: POSSIBLY EXPLOSIVE REACTION UPON HEATING IN PRESENCE OF WATER.
NITROETHANE: FORMS AN EXPLOSIVE SALT.
NITROMETHANE: FORMS AN EXPLOSIVE SALT.
NITROPARAFFINS: THE NITROPARAFFINS, IN THE PRESENCE OF WATER, FORM DRY SALTS WITH ORGANIC BASES. THE DRY SALTS ARE EXPLOSIVE.
NITROPROPANE: FORMS AN EXPLOSIVE SALT.
O-NITROTOLUENE: POSSIBLE EXPLOSION.
OLEUM: MIXING IN A CLOSED CONTAINER CAUSES AN INCREASE IN TEMPERATURE AND PRESSURE.
ORGANIC PEROXIDES: INCOMPATIBLE.
PENTOL (3-METHYL-2-PENTENE-4-YN-1-OL): POSSIBLE EXPLOSION.
PHOSPHORUS: MAY FORM MIXED PHOSPHINES WHICH MAY IGNITE SPONTANEOUSLY IN AIR.
PHOSPHORUS PENTOXIDE: MAY REACT VIOLENTLY WHEN HEATED.
PLASTICS: MAY BE ATTACKED.
B-PROPIOLACTONE: MIXING IN A CLOSED CONTAINER CAUSES AN INCREASE IN TEMPERATURE AND PRESSURE.
PROPYLENE OXIDE: IGNITION OR EXPLOSION MAY OCCUR.

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RUBBER: MAY BE ATTACKED.
SODIUM TETRAHYDROBORATE: DRY MIXTURES WITH SODIUM HYDROXIDE CONTAINING 15-40% OF TETRAHYDROBORATE LIBERATE HYDROGEN EXPLOSIVELY AT 230-270 C. SULFURIC ACID MIXING IN A CLOSED CONTAINER CAUSES AN INCREASE IN TEMPERATURE AND PRESSURE.
1,2,4,5-TETRACHLOROBENZENE: VIOLENT REACTION.
TETRACHLOROBENZENE + METHYL ALCOHOL: POSSIBLE EXPLOSION.
TETRACHLOROETHYLENE: POSSIBLE EXPLOSION.
TETRAHYDROFURAN: SERIOUS EXPLOSIONS CAN OCCUR.
TIN: EVOLUTION OF HYDROGEN GAS WHICH MAY FORM AN EXPLOSIVE MIXTURE.
1,1,1-TRICHLOROETHANOL: EXPLOSION MAY OCCUR.
TRICHLOROETHYLENE: FORMATION OF EXPLOSIVE MIXTURES OF DICHLOROACETYLENE.
TRICHLORONITROMETHANE + METHANOL: MAY CAUSE VIOLENT REACTION.
WOOL: MAY BE ATTACKED.
ZINC (DUST): FIRE AND EXPLOSION HAZARD.
ZIRCONIUM: MAY CAUSE EXPLOSIVE REACTION UPON HEATING.

DECOMPOSITION:
THERMAL DECOMPOSITION MAY RELEASE TOXIC FUMES OF SODIUM OXIDE.

POLYMERIZATION:
HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL TEMPERATURES AND PRESSURES.

STORAGE AND DISPOSAL

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING OF THIS SUBSTANCE. FOR ASSISTANCE, CONTACT THE DISTRICT DIRECTOR OF THE ENVIRONMENTAL PROTECTION AGENCY.

STORAGE

STORE IN A COOL, DRY, WELL-VENTILATED LOCATION. SEPARATE FROM ACIDS, WATER, METALS. IMMEDIATELY REMOVE AND PROPERLY DISPOSE OF ANY SPILLED MATERIAL. (NFPA 49, HAZARDOUS CHEMICALS DATA, 1991)

STORE AWAY FROM INCOMPATIBLE SUBSTANCES.

DISPOSAL

DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 40 CFR 262. EPA HAZARDOUS WASTE NUMBER D002.
100 POUND CERCLA SECTION 103 REPORTABLE QUANTITY.

CONDITIONS TO AVOID

MAY BURN BUT DOES NOT IGNITE READILY. FLAMMABLE, POISONOUS GASES MAY ACCUMULATE IN TANKS AND HOPPER CARS. MAY IGNITE COMBUSTIBLES (WOOD, PAPER, OIL, ETC.).

SPILL AND LEAK PROCEDURES

OIL SPILL:
JIG HOLDING AREA SUCH AS LAGOON, POND OR PIT FOR CONTAINMENT.

USE PROTECTIVE COVER SUCH AS A PLASTIC SHEET TO PREVENT MATERIAL FROM DISSOLVING IN FIRE EXTINGUISHING WATER OR RAIN.

WATER SPILL:
ADD SUITABLE AGENT TO NEUTRALIZE SPILLED MATERIAL TO PH-7.

OCCUPATIONAL SPILL:
DO NOT TOUCH SPILLED MATERIAL. STOP LEAK IF YOU CAN DO IT WITHOUT RISK. FOR SMALL SPILLS, TAKE UP WITH SAND OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR LATER DISPOSAL. FOR SMALL DRY SPILLS, WITH CLEAN SHOVEL PLACE MATERIAL INTO CLEAN, DRY CONTAINER AND COVER. MOVE CONTAINERS FROM SPILL AREA. FOR LARGER SPILLS, DIKE FAR AHEAD OF SPILL FOR LATER DISPOSAL. KEEP UNNECESSARY PEOPLE AWAY. ISOLATE HAZARD AREA AND DENY ENTRY.

REPORTABLE QUANTITY (RQ): 1000 POUNDS
THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) SECTION 304 REQUIRES THAT A RELEASE EQUAL TO OR GREATER THAN THE REPORTABLE QUANTITY FOR THIS SUBSTANCE BE IMMEDIATELY REPORTED TO THE LOCAL EMERGENCY PLANNING COMMITTEE AND THE STATE EMERGENCY RESPONSE COMMISSION (40 CFR 355.40). IF THE RELEASE OF THIS SUBSTANCE IS REPORTABLE UNDER CERCLA SECTION 103, THE NATIONAL RESPONSE CENTER MUST BE NOTIFIED IMMEDIATELY AT (800) 424-8802 OR (202) 426-2675 IN THE METROPOLITAN WASHINGTON, D.C. AREA (40 CFR 302.6).

PROTECTIVE EQUIPMENT

VENTILATION:
PROVIDE LOCAL EXHAUST VENTILATION SYSTEM TO MEET PUBLISHED EXPOSURE LIMITS.

RESPIRATOR:

DATE: 04/03/93
INDEX: 32861270046

ACCT: 784500-08
CAT NO: S318500

PO NBR: N/A

PAGE: 6

THE FOLLOWING RESPIRATORS AND MAXIMUM USE CONCENTRATIONS ARE RECOMMENDATIONS BY THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, NIOSH POCKET GUIDE TO CHEMICAL HAZARDS, NIOSH CRITERIA DOCUMENTS OR BY THE U.S. DEPARTMENT OF LABOR, 29 CFR 1910 SUBPART Z.
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND IN THE WORK PLACE. MUST NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR AND BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION (NIOSH-MSHA).

SODIUM HYDROXIDE:

50 MG/M3- ANY POWERED AIR-PURIFYING RESPIRATOR WITH A DUST AND MIST FILTER
ANY SUPPLIED-AIR RESPIRATOR OPERATED IN A CONTINUOUS FLOW MODE.

100 MG/M3- ANY SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE.
ANY SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE.
ANY AIR-PURIFYING FULL FACEPIECE RESPIRATOR WITH A HIGH EFFICIENCY PARTICULATE FILTER.

250 MG/M3- ANY SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE AND OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

ESCAPE- ANY AIR-PURIFYING FULL FACEPIECE RESPIRATOR WITH A HIGH EFFICIENCY PARTICULATE FILTER.
ANY APPROPRIATE ESCAPE-TYPE SELF-CONTAINED BREATHING APPARATUS.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

ANY SELF-CONTAINED BREATHING APPARATUS THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

ANY SUPPLIED-AIR RESPIRATOR THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

CLOTHING:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE (IMPERVIOUS) CLOTHING AND EQUIPMENT TO PREVENT ANY POSSIBILITY OF SKIN CONTACT WITH THIS SUBSTANCE.

GLOVES:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.

EYE PROTECTION:
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES AND A FACESHIELD TO PREVENT CONTACT WITH THIS SUBSTANCE.

EMERGENCY WASH FACILITIES:
WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES AND/OR SKIN MAY BE EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH FOUNTAIN AND QUICK DRENCH SHOWER WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

AUTHORIZED - FISHER SCIENTIFIC, INC.
CREATION DATE: 12/17/84 REVISION DATE: 12/28/92

-ADDITIONAL INFORMATION-
THIS INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES.

Thursday, July 18, 2002

OxyChem®**MATERIAL SAFETY DATA SHEET**

Revised

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS NUMBER : M32415 ISSUE DATE : 07-30-01

PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

Manufacturer's
Name and
Address : Occidental Chemical Corporation, Occidental Tower
5005 LBJ Freeway, P.O. Box 809050
Dallas, TX 75380 (972) 404-3800

24 HOUR EMERGENCY TELEPHONE : 1-800-733-3665 OR 972-404-3228

TO REQUEST AN MSDS : 1-800-699-4970

CUSTOMER SERVICE : 1-800-752-5151

PRODUCT USE : Metal finishing, industrial cleaners, chemical
processing, petroleum industry

CHEMICAL NAME : Sodium hydroxide

CHEMICAL FORMULA : NaOH

SYNONYMS/COMMON NAMES : Sodium hydroxide solution

Revised

2. COMPOSITION/INFORMATION ON INGREDIENTSCAS NUMBER / NAME
7732-18-9 Water**EXPOSURE LIMITS**

PEL: Not Established
TLV: Not Established
PEL22: Not Established

PERCENTAGE

VOL ND
WT 48.5-94.5

COMMON NAMES:
(MW 18.02)

Listed On (List Legend Below):
00 19 22 23 51

Friday, July 19, 2002 CHEMICAL CORPORATION

MSDS NUMBER : 1032415

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PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

2. COMPOSITION/INFORMATION ON INGREDIENTS (Continued)

1310-73-2 Sodium hydroxide (Na(OH))

EXPOSURE LIMITS

PEL: 2 MG/M3 CEIL

TLV: 2 MG/M3 CEIL

PEL22: Not Established

PERCENTAGE

VOL

ND

WT

5.5-51.5

COMMON NAMES:

CAUSTIC SODA (MW 40.00)

Listed On (List Legend Below):

00 12 13 21 22 51 56 57

7647-14-5 Sodium chloride (NaCl)

EXPOSURE LIMITS

PEL: Not Established

TLV: Not Established

PEL22: Not Established

PERCENTAGE

VOL

ND

WT

0-1.3

COMMON NAMES:

Salt (MW 58.44)

Listed On (List Legend Below):

00 22 23 51

LIST LEGEND

00 TSCA INVENTORY

13 PA ENVIRONMENTAL HAZ SUBSTANCE

21 NJ SPECIAL HEALTH HAZ SUB

23 NJ REQUIREMENT- 1% OR GREATER

56 OSHA PERMISSIBLE EXPOSURE LIM.

12 PA HAZARDOUS SUBSTANCE

19 PA REQUIREMENT- 3% OR GREATER

22 CANADIAN DOMESTIC SUB LIST

51 EINECS

57 ACGIH THRESHOLD LIMIT VALUES

Revised

3. HAZARDS IDENTIFICATION

***** EMERGENCY OVERVIEW *****

* MAY CAUSE BURNS TO THE EYES, SKIN, RESPIRATORY AND
* GASTROINTESTINAL TRACT. MAY CAUSE PERMANENT EYE DAMAGE.

* Clear liquid with no distinct odor

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY:

Inhalation, Ingestion

TARGET ORGANS:

Eyes, Skin, Respiratory Tract, Gastrointestinal Tract.

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ACCIDENTAL CHEMICAL CORPORATION
MSDS NUMBER : M2415
PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

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3. HAZARDS IDENTIFICATION (Continued)

IRRITANCY:

All routes of exposure, Corrosive.

SENSITIZING CAPABILITY:

None known.

REPRODUCTIVE EFFECTS:

None known.

CANCER INFORMATION:

Not classified as carcinogenic by NTP, IARC, OSHA, ACGIH, or NIOSH.

SHORT-TERM EXPOSURE (ACUTE)**INHALATION:**

Exposure can produce burns.

EYES:

Corrosive

Contact may cause burns and tissue destruction.

The severity of the effects depend on concentration and how soon after exposure the area is washed.

MAY CAUSE PERMANENT EYE DAMAGE.

SKIN:

Corrosive

Contact may cause burns and tissue destruction.

May cause burns that are not immediately noticed or painful.

INGESTION:

Corrosive

Contact may cause burns and tissue destruction.

REPEATED EXPOSURE (CHRONIC)

None known.

SYNERGISTIC MATERIALS:

None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

None known.

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PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

Revised

4. FIRST AID MEASURES**EYES:**

Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN:

Immediately flush contaminated areas with water. Remove contaminated clothing and footwear. Wash contaminated areas with plenty of soap and water. Wash clothing before reuse. Discard footwear which cannot be decontaminated. GET MEDICAL ATTENTION IMMEDIATELY.

INHALATION:

Remove to fresh air if safe to transport. Otherwise attempt to provide fresh air by ventilation. If breathing is difficult, have a trained person administer oxygen. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation/Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY (911 or emergency transport services).

INGESTION:

Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting. Give large quantities of water. (If available, give several glasses of milk.) If vomiting occurs spontaneously, keep airway clear and give more water. GET MEDICAL ATTENTION IMMEDIATELY.

NOTES TO PHYSICIAN:

No specialized procedures. Treat for clinical symptoms.

Revised

5. FIRE FIGHTING MEASURES

Flash Point: Not applicable

Method: Not applicable

Autoignition Temperature: Not applicable

FLAMMABLE LIMITS IN AIR BY % VOLUME

Upper: Not applicable

Lower: Not applicable

EXTINGUISHING MEDIA

Non-flammable / Non-combustible.

Use agents appropriate for surrounding fire.

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MSDS NUMBER : M2415

07-30-01

PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

5. FIRE FIGHTING MEASURES (Continued)

FIRE FIGHTING PROCEDURES:

Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and full protective clothing.

FIRE AND EXPLOSION HAZARD:

None known.

SENSITIVITY TO MECHANICAL IMPACT:

Not sensitive.

SENSITIVITY TO STATIC DISCHARGE:

Not sensitive.

Revised

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Follow protective measures provided under Personal Protection in Section 8.

Evacuate unnecessary personnel and eliminate all sources of ignition.

ENVIRONMENTAL PRECAUTIONS:

Do not allow entry into sewers and waterways.

METHODS FOR CLEANING UP:

For small spills, soak up with absorbent material and place in properly labeled containers for disposal.

For large spills, dike and pump into properly labeled containers for reclamation or disposal.

Revised

7. HANDLING AND STORAGE

HANDLING:

Use with adequate ventilation.

Avoid breathing vapors.

Wear personal protective equipment as described in Exposure Controls/Personal Protection (Section 8) of the MSDS.

SPECIAL MIXING AND HANDLING INSTRUCTIONS:

Do not allow contact with materials as noted in Section 10.

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PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

7. HANDLING AND STORAGE (Continued)

STORAGE:

Keep container tightly closed and properly labeled.

Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas can be generated.

Revised

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Handle product in a well ventilated area.

If product is handled in an open system, the use of process enclosures, local exhaust ventilation, and/or other engineering controls should be considered to control airborne levels to below recommended exposure limits, or below acceptable levels where there are no limits.

PERSONAL PROTECTION**RESPIRATORY:**

A NIOSH approved respirator with a dust, fume and mist filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure.

A respiratory protection program that meets 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant use of a respirator.

EYE/FACE:

Wear chemical safety goggles plus full face shield to protect against contact when appropriate (ANSI Z87.1).

SKIN:

Wear protective clothing to minimize skin contact.

Wear chemical resistant gloves such as rubber, neoprene or vinyl.

OTHER:

Discard leather items that cannot be decontaminated.

Emergency shower and eyewash facility should be in close proximity (ANSI Z358.1).

Thursday, July 18, 2002 CENTRAL CHEMICAL CORPORATION

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MSDS NUMBER : M32415

07-30-01

PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

Revised:

9. PHYSICAL AND CHEMICAL PROPERTIES

	Concentration, weight %				
	10	20	30	40	50
Physical State: Liquid:	110	113	119	129	144
Boiling Pt @ 760 mm Hg, °C:	-10	-32	0	15	12
Freezing Pt °C:	135	110	76	46	13
Vapor Press., mm Hg @ 60°C:	1.11	1.22	1.33	1.43	1.53
Spec. Grav. @ 15.6°C:	9.27	10.20	11.11	11.97	12.76
Density, lb/gal @ 15.6 C:	100				
Sol. in H ₂ O, % by Wt.:	Not applicable.				
Vapor Density:	Not determined				
Odor Threshold (ppm):	Not determined				
Evaporation Rate:	Not applicable				
Coefficient Water/Oil Distribution:	7.5% solution has pH 14.0				
pH:					

Appearance and Odor: Clear liquid with no distinct odor

Revised:

10. STABILITY AND REACTIVITY**CHEMICAL STABILITY:**☒ STABLE ☐ UNSTABLE**REACTS WITH:**

<input checked="" type="checkbox"/> AIR	<input type="checkbox"/> OXIDIZERS	<input checked="" type="checkbox"/> METALS
<input type="checkbox"/> WATER	<input checked="" type="checkbox"/> ACIDS	<input checked="" type="checkbox"/> OTHER
<input type="checkbox"/> HEAT	<input type="checkbox"/> ALKALIS	<input type="checkbox"/> NONE

HAZARDOUS POLYMERIZATION:☐ OCCURS ☒ WILL NOT OCCUR**COMMENTS:**

Product is corrosive to tin, aluminum, zinc and alloys containing these metals and will react with these metals in powder form. Avoid contact with leather, wool, acids, organic halogen compounds, or organic nitro compounds. Hazardous carbon monoxide gas can form upon contact with reducing sugars, food and beverage products in enclosed spaces and can cause death. Follow appropriate tank entry procedures.

Prolonged contact with aluminum may produce flammable hydrogen gas.

HAZARDOUS DECOMPOSITION PRODUCTS:

None.

OCCIDENTAL CHEMICAL CORPORATION
MSDS NUMBER : 132415
PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

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Revised

11. TOXICOLOGICAL INFORMATION

1310-73-2 Sodium hydroxide (Na(OH))

This substance is alkaline and corrosive. Minimize contact. The irritating and corrosive properties of this substance depend on its concentration. It is toxic by the oral route. It may cause burns and other effects to the mucous membranes, mouth and digestive tract. Its dermal toxicity has not been determined. It may cause burns that are not immediately noticed or painful. Inhalation of dust or vapors can cause airway effects including burns. This substance is irritating and corrosive to the eyes and skin.

The irritating and corrosive properties of this substance depend on its concentration. In general, serious injury is associated with products with a pH of 11.5 or higher.

For further information call or write the address shown on page 1 of the MSDS.

Revised

12. ECOLOGICAL INFORMATION

1310-73-2 Sodium hydroxide (Na(OH))

TOXICITY: This material is believed to be slightly toxic to aquatic life.

PERSISTENCE: This material is believed to be unlikely to persist in the environment.

BIOACCUMULATION: This material is believed to be unlikely to bioaccumulate.

For further information call or write the address shown on page 1 of the MSDS.

Revised

13. DISPOSAL CONSIDERATIONS

Dispose of all waste and contaminated equipment in accordance with all applicable federal, state and local health and environmental regulations.

Revised

14. TRANSPORT INFORMATION

DOT PROPER SHIPPING NAME: Sodium Hydroxide, solution

DOT HAZARD CLASS: 8

DOT IDENTIFICATION NO: UN1824

DOT PACKING GROUP: II

DOT HAZARDOUS SUBSTANCE: RQ 1,000 Lbs. (Sodium Hydroxide)

Thursday, July 18, 2002 NTAL CHEMICAL CORPORATION

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PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

14. TRANSPORT INFORMATION (Continued)

DOT MARINE POLLUTANT(S): Not Applicable

ADDITIONAL DESCRIPTION REQUIREMENT: Not Applicable

Revised

15. REGULATORY INFORMATION**U.S. FEDERAL REGULATIONS:**

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Material Safety Data Sheet available to your employees.

TSCA:

All components of this product that are required to be on the TSCA inventory are listed on the inventory.

SARA/TITLE III HAZARD CATEGORIES:

If the word "YES" appears next to any category, this product may be reportable by you under the requirements of 40 CFR 370. Please consult those regulations for details.

Immediate (Acute) Health:	<u>YES</u>	Reactive Hazard	<u>YES</u>
Delayed (Chronic) Health:	<u>NO</u>	Sudden Release of Pressure	<u>NO</u>
Fire Hazard:	<u>NO</u>		

HMIS HAZARD RATINGS:

HEALTH HAZARD:	<u>3</u>	FIRE HAZARD:	<u>0</u>	REACTIVITY:	<u>2</u>
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STATE REGULATIONS:

See Section 2. COMPOSITION/INFORMATION ON INGREDIENTS list legend for applicable state regulation.

Consult local laws for applicability.

INTERNATIONAL REGULATIONS:

Consult the regulations of the importing country.

CANADA:

WHMIS Hazard Class: D1B, D2B, E

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PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

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16. OTHER INFORMATION

For additional non-emergency health, safety or environmental information telephone (972) 404-2076 or write to:

Occidental Chemical Corporation
Product Stewardship Department
5005 LBJ Freeway
P.O. Box 809050
Dallas, Texas 75380

MSDS LEGEND:

ACGIH - American Conference of Governmental Industrial Hygienists

CAS - Chemical Abstracts Service Registry Number

CEILING - Ceiling Limit (15 Minutes)

CEL - Corporate Exposure Limit

OSHA - Occupational Safety and Health Administration

PEL - Permissible Exposure Limit (OSHA)

STEL - Short Term Exposure Limit (15 Minutes)

TDG - Transportation of Dangerous Goods (Canada)

TLV - Threshold Limit Value (ACGIH)

TWA - Time Weighted Average (8 Hours)

WHMIS - Worker Hazardous Materials Information System (Canada)

* - See Section 3 Hazards Identification - Repeated Exposure (Chronic) Information

IMPORTANT: The information presented herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE, OR OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling and storage. Other factors may involve other or additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as a recommendation to infringe any existing patents or violate any federal, state or local laws, rules, regulations or ordinances.

This Material Safety Data Sheet (MSDS) covers the following materials:

- CAUSTIC SODA LIQUID (ALL GRADES)
- 50% CAUSTIC SODA DIAPHRAGM GRADE
- 18% CAUSTIC SODA RAYON GRADE
- 20% CAUSTIC SODA RAYON GRADE
- 25% CAUSTIC SODA RAYON GRADE
- 30% CAUSTIC SODA RAYON GRADE
- 50% CAUSTIC SODA RAYON GRADE
- 50% CAUSTIC SODA RAYON GRADE OS

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MSDS NUMBER : M2415

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PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

16. OTHER INFORMATION (Continued)

- 50% CAUSTIC SODA MEMBRANE GRADE
- 18% CAUSTIC SODA - DIAPHRAGM
- 15% CAUSTIC SODA - DIAPHRAGM
- 30% CAUSTIC SODA - DIAPHRAGM
- 25% CAUSTIC SODA - DIAPHRAGM
- 20% CAUSTIC SODA - DIAPHRAGM
- 35% CAUSTIC SODA - DIAPHRAGM
- 50% CAUSTIC SODA - DIAPHRAGM
- 50% CAUSTIC SODA - DIAPHRAGM OS
- 50% CAUSTIC SODA - PURIFIED
- 50% CAUSTIC SODA - PURIFIED OS
- 18% CAUSTIC SODA - MEMBRANE
- CAUSTIC SODA LIQUID 70/30
- 50% CAUSTIC SODA - MEMBRANE
- 50% CAUSTIC SODA - MEMBRANE OS
- 25% CAUSTIC SODA - MEMBRANE
- 20% CAUSTIC SODA - MEMBRANE
- 40% CAUSTIC SODA - DIAPHRAGM
- 25% CAUSTIC SODA - MEMBRANE
- 6% CAUSTIC SODA - MEMBRANE
- 10% CAUSTIC SODA - DIAPHRAGM
- 25% CAUSTIC SODA - DIAPHRAGM
- MEMBRANE BLENDED
- 48% CAUSTIC SODA - MEMBRANE

Revised

17. WARNING LABEL INFORMATION

SIGNAL WORD:

DANGER

HAZARD WARNINGS:

MAY CAUSE BURNS TO THE EYES, SKIN, RESPIRATORY AND GASTROINTESTINAL TRACT.

MAY CAUSE PERMANENT EYE DAMAGE.

PRECAUTIONS:

Avoid contact with eyes, skin and clothing.

Avoid breathing dust, vapors or mist.

Use with adequate ventilation.

Wash thoroughly after handling; exposure can cause burns which are not immediately painful or visible.

Keep container tightly closed and properly labeled.

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July 19, 2002/R : 132415

07-30-01

PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

17. WARNING LABEL INFORMATION (Continued)

FIRST AID**EYES:**

Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN:

Immediately flush contaminated areas with water. Remove contaminated clothing and footwear. Wash contaminated areas with plenty of soap and water. Wash clothing before reuse. Discard footwear which cannot be decontaminated. GET MEDICAL ATTENTION IMMEDIATELY.

INHALATION:

Remove to fresh air if safe to transport. Otherwise attempt to provide fresh air by ventilation. If breathing is difficult, have a trained person administer oxygen. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation/Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY (911 or emergency transport services).

INGESTION:

Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting. Give large quantities of water. (If available, give several glasses of milk.) If vomiting occurs spontaneously, keep airway clear and give more water. GET MEDICAL ATTENTION IMMEDIATELY.

IN CASE OF SPILL OR LEAK:

Do not allow entry into sewers and waterways.

For small spills, soak up with absorbent material and place in properly labeled containers for disposal.

For large spills, dike and pump into properly labeled containers for reclamation or disposal.

FIRE:

Non-flammable / Non-combustible.

Use agents appropriate for surrounding fire.

HANDLING AND STORAGE:

Store in a cool, ventilated area away from incompatible materials (see Section 10).

DISPOSAL:

Dispose of all waste and contaminated equipment in accordance with all applicable federal, state and local health and environmental regulations.

Thursday, July 19, 2002

OCCIDENTAL CHEMICAL CORPORATION

MSDS NUMBER : M32415

PRODUCT NAME : CAUSTIC SODA LIQUID (ALL GRADES)

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17. WARNING LABEL INFORMATION (Continued)**INFORMATION REQUIRED BY FEDERAL, STATE OR LOCAL REGULATIONS:****This Product Contains:**

CAS#	NAME
7732-18-5	Water
1310-73-2	Sodium hydroxide (Na(OH))
7647-14-5	Sodium chloride (NaCl)

HMIS RATING: HEALTH 3 FLAMMABILITY 0 REACTIVITY 2

LABEL NUMBER: 0701M32415

For Industrial Use Only

***SULFURIC ACID**
 ***SULFURIC ACID**
 ***SULFURIC ACID**

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC
 CHEMICAL DIVISION
 1 REAGENT LANE
 FAIR LAWN NJ 07410
 (201) 796-7100

EMERGENCY CONTACTS:
 GASTON L. PILLORI: (201) 796-7100
 AFTER BUSINESS HOURS; HOLIDAYS:
 (201) 796-7523
 CHEMTREC ASSISTANCE: (800) 429-9300

DATE: 03/30/89
 PO NBR: C19344
 ACCT: 784500-06
 INDEX: 11890860457
 CAT NO: A300SI21

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SUBSTANCE IDENTIFICATION

SUBSTANCE: ***SULFURIC ACID**

CAS-NUMBER 7664-93-9

TRADE NAMES/SYNONYMS:
 OIL OF VITRIOL; BOV; DIPPING ACID; VITRIOL BROWN OIL; HYDROGEN SULFATE;
 NORDHADSEN ACID; DIHYDROGEN SULFATE; SULPHURIC ACID; MATTING ACID;
 DITHIONIC ACID; STCC 4930040; UN 1830; A-300; A-300C; A-300-SI; A-300S;
 A-298; A-510; A-468; SO-A-172; SO-A-174; ACC22350

CHEMICAL FAMILY:
 INORGANIC ACID

MOLECULAR FORMULA: H2-S-O4

MOLECULAR WEIGHT: 98.07

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=0 REACTIVITY=2 PERSISTENCE=0
 NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=0 REACTIVITY=2

COMPONENTS AND CONTAMINANTS

COMPONENT: SULFURIC ACID	PERCENT: 98
COMPONENT: WATER	PERCENT: 2

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:
 SULFURIC ACID:
 1 MG/M3 OSHA TWA
 1 MG/M3 ACGIH TWA (NOTICE OF INTENDED CHANGE 1987-1988)
 1 MG/M3 NIOSH RECOMMENDED 10 HOUR TWA

1000 POUNDS SARA SECTION 302 THRESHOLD PLANNING QUANTITY
 1000 POUNDS SARA SECTION 304 REPORTABLE QUANTITY
 SUBJECT TO SARA SECTION 313 ANNUAL TOXIC CHEMICAL RELEASE REPORTING

PHYSICAL DATA

DESCRIPTION: ODORLESS, CLEAR, COLORLESS, DENSE HYGROSCOPIC OILY LIQUID WITH
 A MARKED ACID TASTE WHEN PURE. BOILING POINT: 559 F (290 C)
 MELTING POINT: 50 F (10 C) SPECIFIC GRAVITY: 1.84
 VAPOR PRESSURE: <0.001 @ 20 C PH: <3 SOLUBILITY IN WATER: SOLUBLE
 ODOR THRESHOLD: >1 MG/M3 VAPOR DENSITY: 3.4
 SOLVENT SOLUBILITY: DECOMPOSES IN ETHYL ALCOHOL
 @ 340 C IT DECOMPOSES INTO SULFUR TRIOXIDE AND WATER

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
 NEGLIGIBLE FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

OXIDIZER: OXIDIZERS DECOMPOSE, ESPECIALLY WHEN HEATED, TO YIELD OXYGEN OR
 OTHER GASES WHICH WILL INCREASE THE BURNING RATE OF COMBUSTIBLE MATTER.
 CONTACT WITH EASILY OXIDIZABLE, ORGANIC, OR OTHER COMBUSTIBLE MATERIALS
 MAY RESULT IN IGNITION, VIOLENT COMBUSTION OR EXPLOSION.

FIREFIGHTING MEDIA:
 DRY CHEMICAL, CARBON DIOXIDE OR HALON
 (1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4).

FOR LARGER FIRES, FLOOD AREA WITH WATER FROM A DISTANCE
 (1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4).

FIREFIGHTING:

DO NOT GET SOLID STREAM OF WATER ON SPILLED MATERIAL. MOVE CONTAINERS FROM FIRE AREA IF POSSIBLE. COOL CONTAINERS EXPOSED TO FLAMES WITH WATER FROM SIDE UNTIL WELL AFTER FIRE IS OUT. KEEP AWAY FROM STORAGE TANK ENDS (1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4 GUIDE PAGE 39).

USE AGENT SUITABLE FOR TYPE OF FIRE, USE FLOODING AMOUNTS OF WATER AS A FOG. COOL CONTAINERS WITH FLOODING AMOUNTS OF WATER, APPLY FROM AS FAR A DISTANCE AS POSSIBLE. AVOID BREATHING CORROSIVE VAPORS, KEEP UPWIND.

TRANSPORTATION DATA

DEPARTMENT OF TRANSPORTATION HAZARD CLASSIFICATION 49CFR172.101:
CORROSIVE MATERIAL

DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS 49CFR172.101 AND 172.402:
CORROSIVE

DEPARTMENT OF TRANSPORTATION PACKAGING REQUIREMENTS: 49CFR173.272
EXCEPTIONS: 49CFR173.244

TOXICITY

SULFURIC ACID:

1380 UG EYE-RABBIT SEVERE IRRITATION; 100 MG EYE-RABBIT RINSED SEVERE IRRITATION; 3 MG/M3/24 WEEKS INHALATION-HUMAN TCLO; 510 MG/M3/2 HOURS INHALATION-RAT LC50; 320 MG/M3 2 HOURS INHALATION-MOUSE LC50; 18 MG/M3 INHALATION-GUINEA PIG LC50; 2140 MG/KG ORAL-RAT LD50; 135 MG/KG UNREPORTED-MAN LDLO; TUMORIGENIC DATA (AJEPAS 120(3), 358, 84).
CARCINOGEN STATUS: NONE.

SULFURIC ACID IS HIGHLY TOXIC, AND A SEVERE EYE, SKIN AND MUCOUS MEMBRANE IRRITANT. POISONING MAY AFFECT THE BODY'S PH BALANCE AND IN TURN AFFECT THE NERVOUS SYSTEM.

HEALTH EFFECTS AND FIRST AID

INHALATION:

SULFURIC ACID:

CORROSIVE/HIGHLY TOXIC. 80 MG/M3 IMMEDIATELY DANGEROUS TO LIFE OR HEALTH.

ACUTE EXPOSURE- INHALATION OF MISTS MAY CAUSE MUCOUS MEMBRANE IRRITATION PRINCIPALLY AFFECTING THE RESPIRATORY TRACT EPITHELIUM. LOW CONCENTRATIONS, 0.35-5 MG/M3, MAY CAUSE INCREASED PULMONARY AIR FLOW RESISTANCE AND SUBSEQUENT SHALLOWER AND MORE RAPID BREATHING. HOT CONCENTRATED MISTS MAY CAUSE RAPID LOSS OF CONSCIOUSNESS WITH POSSIBLE DAMAGE TO LUNG TISSUE. VAPORS MAY CAUSE NASAL SECRETIONS, SNEEZING, A BURNING OR TICKLING SENSATION IN THE NOSE AND THROAT AND RETROSTERNAL REGION, FOLLOWED BY COUGH, RESPIRATORY DISTRESS, TRACHEOBRONCHITIS, CHEMICAL PNEUMONITIS AND POSSIBLE SPASM OF THE VOCAL CORDS. HIGH CONCENTRATIONS MAY PRODUCE BLOODY NASAL SECRETIONS AND SPUTUM, HEMATEMESIS GASTRITIS, AND PULMONARY EDEMA. A SINGLE OVEREXPOSURE MAY LEAD TO LARYNGEAL, TRACHEOBRONCHIAL AND PULMONARY EDEMA. ONE INDIVIDUAL SPRAYED IN THE FACE WITH SULFURIC ACID LIQUID EXPERIENCED DELAYED SYMPTOMS OF PULMONARY FIBROSIS, RESIDUAL BRONCHITIS, AND PULMONARY EMPHYSEMA. VAPORS FROM DILUTE SOLUTIONS MAY IRRITATE MUCOUS MEMBRANES.

CHRONIC EXPOSURE- REPEATED EXPOSURE TO THE MIST MAY CAUSE INFLAMMATION OF THE UPPER RESPIRATORY TRACT, CHRONIC BRONCHITIS AND ETCHING OF THE DENTAL ENAMEL. THE CENTRAL AND LATERAL INCISORS ARE PRIMARILY AFFECTED. REPEATED EXCESSIVE EXPOSURE OVER LONG PERIODS OF TIME HAVE RESULTED IN BRONCHITIC SYMPTOMS, RHINORRHEA, FREQUENT RESPIRATORY TRACT INFECTIONS, EMPHYSEMA, STOMATITIS AND DIGESTIVE DISTURBANCES. CHRONIC INHALATION MAY CAUSE ALKALINE DEPLETION OF THE BODY PRODUCING AN ACIDOSIS WHICH AFFECTS THE NERVOUS SYSTEM AND PRODUCES AGITATION, HESITANT GAIT AND GENERALIZED WEAKNESS. AN EPIDEMIOLOGICAL STUDY OF WORKERS AT A REFINERY AND CHEMICAL PLANT SUGGESTS AN INCREASED RISK OF LARYNGEAL CANCER FROM EXPOSURE TO HIGH CONCENTRATIONS OF SULFURIC ACID.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. MAINTAIN AIRWAY AND BLOOD PRESSURE AND ADMINISTER OXYGEN IF AVAILABLE. KEEP AFFECTED PERSON WARM AND AT REST. TREAT SYMPTOMATICALLY AND SUPPORTIVELY. ADMINISTRATION OF OXYGEN SHOULD BE PERFORMED BY QUALIFIED PERSONNEL. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:

SULFURIC ACID:

CORROSIVE.

ACUTE EXPOSURE- CONTACT WITH CONCENTRATED SULFURIC ACID MAY CAUSE SEVERE SECOND AND THIRD DEGREE SKIN BURNS WITH NECROSIS DUE TO ITS AFFINITY FOR WATER AND SUBSEQUENT SEVERE DEHYDRATING ACTION, AND ITS EXOTHERMIC REACTION WITH MOISTURE. POSSIBLE CHARRING MAY OCCUR LEADING TO SHOCK AND COLLAPSE DEPENDING ON THE AMOUNT OF TISSUE INVOLVED. THE RESULTING WOUNDS MAY BE LONG IN HEALING AND MAY CAUSE EXTENSIVE SCARRING THAT MAY RESULT IN FUNCTIONAL INHIBITION. CONTACT WITH DILUTE SOLUTIONS MAY CAUSE SKIN IRRITATION.

CHRONIC EXPOSURE- REPEATED CONTACT WITH LOW CONCENTRATIONS MAY CAUSE SKIN DESICCATION AND ULCERATION OF THE HANDS, AND PANARIS OR CHRONIC PURULENT INFLAMMATION AROUND THE NAILS. REPEATED CONTACT WITH DILUTE SOLUTIONS MAY CAUSE DERMATITIS.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (AT LEAST 15-20 MINUTES). IN CASE OF CHEMICAL BURNS, COVER AREA WITH STERILE, DRY DRESSING. BANDAGE SECURELY, BUT NOT TOO TIGHTLY. GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:
SULFURIC ACID:
CORROSIVE.

ACUTE EXPOSURE- EXPOSURE TO THE VAPORS MAY CAUSE A BURNING OR STINGING SENSATION IN THE EYES WITH LACRIMATION, BLURRED VISION AND CONJUNCTIVAL CONGESTION. SPLASHES OF ACID IN THE EYES MAY PRODUCE DEEP CORNEAL ULCERATION, KERATO-CONJUNCTIVITIS AND PALPEBRAL LESIONS WITH SEVERE SEQUELAE. IRREPARABLE CORNEAL DAMAGE AND BLINDNESS AS WELL AS SCARRING OF THE EYELIDS MAY OCCUR. SEVERE SULFURIC ACID EYE BURNS HAVE INCLUDED GLAUCOMA AND CATARACT AS COMPLICATIONS IN THE MOST SEVERE CASES. CONTACT WITH DILUTED ACID MAY PRODUCE MORE TRANSIENT EFFECTS FROM WHICH RECOVERY MAY BE COMPLETE.

CHRONIC EXPOSURE- REPEATED EXPOSURE MAY RESULT IN LACRIMATION AND CHRONIC CONJUNCTIVITIS.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER, OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (AT LEAST 15-20 MINUTES). CONTINUE IRRIGATING WITH NORMAL SALINE UNTIL THE PH HAS RETURNED TO NORMAL (30-60 MINUTES). COVER WITH STERILE BANDAGES. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:
SULFURIC ACID:
CORROSIVE.

ACUTE EXPOSURE- INGESTION MAY CAUSE BURNING PAIN IN THE MOUTH, THROAT, ESOPHAGUS AND ABDOMEN, A SOUR TASTE AND NAUSEA FOLLOWED BY VOMITING AND DIARRHEA OF CHARRED BLACK STOMACH CONTENTS. DEHYDRATION AND CARBONIZATION OF TISSUE MAY OCCUR WITH ESCHARS ON THE LIPS AND MOUTH. BROWNISH OR YELLOWISH STAINS MAY BE FOUND AROUND THE MOUTH, INTENSE THIRST, DIFFICULT SWALLOWING, ACIDEMIA, STOMATITIS, RAPID AND WEAK PULSE, SHALLOW BREATHING, SHOCK AND POSSIBLE CONVULSIONS MAY OCCUR. ALBUMIN, BLOOD AND CASTS IN URINE, ANURIA, ESOPHAGEAL AND DELAYED GASTRIC STENOSIS HAS BEEN REPORTED. POSSIBLE PERFORATION OF THE GASTROINTESTINAL TRACT MAY RESULT IN PERITONITIS.

CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- IF VICTIM IS CONSCIOUS, GIVE HIM LARGE QUANTITIES OF WATER IMMEDIATELY TO DILUTE THE ACID. DO NOT INDUCE VOMITING. GIVE PATIENT 1 OUNCE (30 ML) OF MILK OF MAGNESIA. GET MEDICAL ATTENTION IMMEDIATELY.

ANTIDOTE:
NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

REACTIVITY

REACTIVITY:
VIOLENT EXOTHERMIC REACTION WITH WATER.

INCOMPATIBILITIES:
SULFURIC ACID:

ACETALDEHYDE: VIOLENTLY POLYMERIZED BY CONCENTRATED ACID.
ACETIC ANHYDRIDE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
ACETONE + NITRIC ACID: VIOLENT DECOMPOSITION.
ACETONE + POTASSIUM DICHROMATE: IGNITION.
ACETONE CYANHYDRIN: PRESSURE INCREASE WITH POSSIBLE EXPLOSIVE RUPTURE OF VESSEL.
ACETONITRILE: VIOLENT EXOTHERM ON HEATING; SULFUR TRIOXIDE REDUCES INITIATION TEMPERATURE.
ACROLEIN: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
ACRYLONITRILE: VIGOROUS EXOTHERMIC POLYMERIZATION.
ALCOHOL: EXOTHERMIC REACTION AND CONTRACTION OF VOLUME.
ALCOHOLS AND HYDROGEN PEROXIDE: POSSIBLE EXPLOSION.
ALLYL ALCOHOL: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
ALLYL CHLORIDE: VIOLENT POLYMERIZATION.
ALKYL NITRATES: MAY CAUSE VIOLENT REACTION.
2-AMINOETHANOL: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
AMMONIUM HYDROXIDE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
AMMONIUM IRON(III) SULFATE DODECAHYDRATE: VIOLENT, EXOTHERMIC REACTION ON HEATING.
AMMONIUM TRIPERCHROMATE: FIRE OR EXPLOSION HAZARD.
ANILINE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
BASES: VIOLENT REACTION.
BENZYL ALCOHOL: MAY DECOMPOSES EXPLOSIVELY AT ABOUT 180 C.
BROMATES + METALS: POSSIBLE IGNITION.
BROMINE PENTAFLUORIDE: VIOLENT REACTION WITH POSSIBLE IGNITION.
TERT-BUTYL-M-XYLENE: VIOLENT EXOTHERMIC REACTION WITHOUT AGITATION.
N-BUTYRALDEHYDE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
CARBIDES: HAZARDOUS MIXTURE.
CESIUM ACETYLIDE: IGNITION ON CONTACT.
4-CHLORONITROBENZENE AND SULFUR TRIOXIDE: POSSIBLE EXPLOSIVE REACTION.
CHLORATES: ALL CHLORATES, WHEN BROUGHT IN CONTACT WITH SULFURIC ACID MAY GIVE OFF EXPLOSIVE CHLORINE DIOXIDE GAS. A VIOLENT EXPLOSION IS USUAL.
CHLORATES + METALS: POSSIBLE IGNITION.
CHLORINE TRIFLUORIDE: VIOLENT REACTION.
CHLOROSULFONIC ACID: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
CHROMATES: FIRE AND EXPLOSION HAZARD.
COATINGS: ATTACKED.
COMBUSTIBLE MATERIALS (FINELY DIVIDED): MAY IGNITE.
COPPER: EVOLUTION OF SULFUR DIOXIDE.
CUPROUS NITRIDE: VIOLENT REACTION.
2-CYANO-4-NITROBENZENEDIAZONIUM HYDROGEN SULFATE: EXOTHERMIC REACTION.
2-CYANO-2-PROPANOL: VIOLENT REACTION WITH INCREASE IN PRESSURE.
CYCLOPENTADIENE: VIOLENT OR EXPLOSIVE REACTION.
CYCLOPENTANONE OXIME: VIOLENT REACTION.
1,3-DIAZIDOBENZENE: IGNITION FOLLOWED BY EXPLOSIVE REACTION.
DIETHYLAMINE: EXOTHERMIC REACTION.

DIISOBUTYLENE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 DIMETHYLBENZYL CARBINOL + HYDROGEN PEROXIDE: EXPLODES.
 DIMETHOXYANTHRAQUINONE: EXOTHERMIC REACTION ABOVE 150 C.
 2,5-DINITRO-3-METHYLBENZOIC ACID + SODIUM AZIDE: EXPLOSIVE REACTION.
 1,5-DINITRONAPHTHALENE + SULFUR: EXOTHERMIC REACTION.
 EPICHLOROHYDRIN: VIOLENT REACTION.
 ETHOXYLATED NONYLPHENOL: POSSIBLE IGNITION.
 ETHANOL + HYDROGEN PEROXIDE: POSSIBLE EXPLOSION.
 ETHYLENE CYANOHYDRIN: VIOLENT REACTION.
 ETHYLENE DIAMINE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 ETHYLENE GLYCOL: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 ETHYLENIMINE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 FULMINATES: EXTREMELY HAZARDOUS MIXTURE.
 HEXALITHIUM DISILICIDE: INCANDESCENT REACTION.
 HYDROCHLORIC ACID: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 HYDROGEN PEROXIDE (>50%): EXPLOSIVE REACTION AFTER EVAPORATION.
 HYDROFLUORIC ACID: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 INDANE + NITRIC ACID: POSSIBLE EXPLOSION.
 IODINE HEPTAFLUORIDE: THE ACID BECOMES EFFERVESCENT.
 IRON: POSSIBLE EXPLOSION DUE TO HYDROGEN GAS FROM THE ACID-METAL REACTION.
 ISOPRENE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 LITHIUM SILICIDE: INCANDESCENT REACTION.
 MERCURY NITRIDE: EXPLOSION ON CONTACT.
 MESITYL OXIDE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 METALS: MAY LIBERATE FLAMMABLE HYDROGEN GAS.
 METALS (POWDERED): EXTREMELY HAZARDOUS MIXTURE.
 METAL ACETYLIDES: IGNITION REACTION.
 METAL CHLORATES: VIOLENT EXPLOSION UNLESS PROPERLY COOLED.
 METAL PERCHLORATES: FORMATION OF EXPLOSIVE PERCHLORIC ACID.
 4-METHYLPYRIDINE: EXOTHERMIC REACTION.
 NITRAMIDE: MAY DECOMPOSE EXPLOSIVELY ON CONTACT.
 NITRATES: INCOMPATIBLE.
 NITRIC ACID + GLYCERIDES: EXPLOSION.
 NITRIC ACID + ORGANIC MATERIAL: MAY CAUSE VIOLENT REACTION.
 NITRIC ACID + TOLUENE: POSSIBLE VIOLENT REACTION OR EXPLOSION.
 NITROARYL BASES AND DERIVATIVES: MAY CAUSE VIOLENT REACTION OR EXPLOSION.
 NITROBENZENE: EXOTHERMIC REACTION AT ELEVATED TEMPERATURES.
 3-NITROBENZENESULFONIC ACID: EXOTHERMIC REACTION.
 NITROMETHANE: FORMATION OF EXPLOSIVE MIXTURE.
 N-NITROMETHYLAMINE: EXPLOSIVE DECOMPOSITION.
 4-NITROTOLUENE: EXPLOSIVE AT 80 C.
 ORGANICS: VIOLENT EXOTHERMIC REACTION.
 PENTASILVER TRIHYDROXYDIAMINOPHOSPHATE: EXPLOSION ON CONTACT.
 PERCHLORATES: POSSIBLE EXPLOSION.
 PERCHLORIC ACID: FORMATION OF DANGEROUS ANHYDROUS PERCHLORIC ACID.
 PERMANGANATES: FORMATION OF PERMANGANIC ACID.
 PERMANGANATES + BENZENE: POSSIBLE EXPLOSION.
 1-PHENYL-2-METHYL-PROPYL ALCOHOL + HYDROGEN PEROXIDE: POSSIBLE EXPLOSION.
 PHOSPHORUS (WHITE OR YELLOW): IGNITION IN CONTACT WITH BOILING ACID.
 PHOSPHORUS ISOCYANATE: VIOLENT REACTION.
 PHOSPHORUS TRIOXIDE: VIOLENT OXIDATION WITH POSSIBLE IGNITION.
 PICRATES: EXTREMELY HAZARDOUS MIXTURE.
 PLASTICS: ATTACKED.
 POLYSILYLENE: EXPLOSION ON CONTACT.
 POTASSIUM: EXPLOSIVE INTERACTION.
 POTASSIUM TERT-BUTOXIDE: IGNITION.
 POTASSIUM CHLORATE: POSSIBLE FIRE AND EXPLOSION.
 POTASSIUM PERMANGANATE: POSSIBLE EXPLOSION IN THE PRESENCE OF MOISTURE.
 POTASSIUM PERMANGANATE + POTASSIUM CHLORIDE: VIOLENT EXPLOSION.
 PROPIOLACTONE (BETA): TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 PROPYLENE OXIDE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 3-PROPYNOL: POSSIBLE EXPLOSION UNLESS ADEQUATELY COOLED.
 PYRIDINE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 REDUCING AGENTS: REACTS.
 RUBBER: ATTACKED.
 RUBIDIUM ACETYLIDE: IGNITION ON CONTACT.
 SILVER PERMANGANATE (MOIST): EXPLOSIVE REACTION.
 SILVER PEROXOCHROMATE: EXPLOSIVE REACTION.
 SODIUM: EXPLOSIVE REACTION WITH AQUEOUS ACID.
 SODIUM CARBONATE: VIOLENT REACTION.
 SODIUM CHLORATE: POSSIBLE FIRE OR EXPLOSION.
 SODIUM HYDROXIDE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 SODIUM TETRAHYDROBORATE: VIOLENT, EXOTHERMIC REACTION.
 SODIUM THIOCYANATE: VIOLENT EXOTHERMIC WITH EVOLUTION OF CARBONYL SULFIDE.
 STEEL: POSSIBLE EXPLOSION DUE TO HYDROGEN GAS FROM THE ACID-METAL REACTION.
 STYRENE MONOMER: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 TETRAMETHYLBENZENES: VIOLENT REACTION IN CLOSED CONTAINERS.
 1,2,4,5-TETRAZINE: VIOLENT DECOMPOSITION ON CONTACT.
 THALLIUM(I) AZIDIDITHIOCARBONATE: MAY EXPLODE ON CONTACT.
 1,3,5-TRINITROSOHEXAHYDRO-1,3,5-TRIAZINE: EXPLOSIVE DECOMPOSITION ON CONTACT.
 VINYL ACETATE: TEMPERATURE AND PRESSURE INCREASE IN CLOSED CONTAINER.
 ZINC CHLORATE: LIKELY TO CAUSE FIRES AND EXPLOSIONS.
 ZINC IODIDE: VIOLENT INTERACTION.

DECOMPOSITION:
 THERMAL DECOMPOSITION MAY RELEASE TOXIC OXIDES OF SULFUR.

POLYMERIZATION:
 HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL TEMPERATURES AND PRESSURES.

 STORAGE AND DISPOSAL

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING OF THIS SUBSTANCE. FOR ASSISTANCE, CONTACT THE DISTRICT DIRECTOR OF THE ENVIRONMENTAL PROTECTION AGENCY.

****STORAGE****

PROTECT AGAINST PHYSICAL DAMAGE AND WATER. SEPARATE FROM CARBIDES, CHLORATES, FULMINATES, NITRATES, PICRATES, POWDERED METALS, AND COMBUSTIBLE MATERIALS (NFPA 49, HAZARDOUS CHEMICALS DATA, 1975).

STORE AWAY FROM INCOMPATIBLE SUBSTANCES.

THRESHOLD PLANNING QUANTITY (TPQ):

THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) SECTION 302 REQUIRES THAT EACH FACILITY WHERE ANY EXTREMELY HAZARDOUS SUBSTANCE IS PRESENT IN A QUANTITY EQUAL TO OR GREATER THAN THE TPQ ESTABLISHED FOR THAT SUBSTANCE NOTIFY THE STATE EMERGENCY RESPONSE COMMISSION FOR THE STATE IN WHICH IT IS LOCATED. SECTION 303 OF SARA REQUIRES THESE FACILITIES TO PARTICIPATE IN LOCAL EMERGENCY RESPONSE PLANNING (40 CFR 355.30).

****DISPOSAL****

DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 40 CFR 262, EPA HAZARDOUS WASTE NUMBER D002.

CONDITIONS TO AVOID

MAY IGNITE OTHER COMBUSTIBLE MATERIALS (WOOD, PAPER, OIL, ETC.). VIOLENT REACTION WITH WATER. FLAMMABLE, POISONOUS GASES MAY ACCUMULATE IN CONFINED SPACES. RUNOFF TO SEWER MAY CREATE FIRE OR EXPLOSION HAZARD.

SPILL AND LEAK PROCEDURES

SOIL SPILL:

DIG HOLDING AREA SUCH AS LAGOON, POND OR PIT FOR CONTAINMENT.

DIKE FLOW OF SPILLED MATERIAL USING SOIL OR SANDBAGS OR FOAMED BARRIERS SUCH AS POLYURETHANE OR CONCRETE.

USE CEMENT POWDER OR FLY ASH TO ABSORB LIQUID MASS.

NEUTRALIZE SPILL WITH SLAKED LIME, SODIUM BICARBONATE OR CRUSHED LIMESTONE.

AIR SPILL:

APPLY WATER SPRAY TO KNOCK DOWN AND REDUCE VAPORS. KNOCK-DOWN WATER IS CORROSIVE AND TOXIC AND SHOULD BE DIKED FOR CONTAINMENT AND LATER DISPOSAL.

WATER SPILL:

NEUTRALIZE WITH AGRICULTURAL LIME, SLAKED LIME, CRUSHED LIMESTONE, OR SODIUM BICARBONATE.

OCCUPATIONAL SPILL:

KEEP COMBUSTIBLES (WOOD, PAPER, OIL, ETC.) AWAY FROM SPILLED MATERIAL. DO NOT TOUCH SPILLED MATERIAL. DO NOT GET WATER INSIDE CONTAINER. STOP LEAK IF YOU CAN DO IT WITHOUT RISK. USE WATER SPRAY TO REDUCE VAPORS. DO NOT PUT WATER ON LEAK OR SPILL AREA. CLEAN UP ONLY UNDER THE SUPERVISION OF AN EXPERT. DIKE SPILL FOR LATER DISPOSAL. DO NOT APPLY WATER UNLESS DIRECTED TO DO SO. KEEP UNNECESSARY PEOPLE AWAY. ISOLATE HAZARD AREA AND DENY ENTRY. VENTILATE CLOSED SPACES BEFORE ENTERING.

REPORTABLE QUANTITY (RQ): 1000 POUNDS

THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) SECTION 304 REQUIRES THAT A RELEASE EQUAL TO OR GREATER THAN THE REPORTABLE QUANTITY FOR THIS SUBSTANCE BE IMMEDIATELY REPORTED TO THE LOCAL EMERGENCY PLANNING COMMITTEE AND THE STATE EMERGENCY RESPONSE COMMISSION (40 CFR 355.40). IF THE RELEASE OF THIS SUBSTANCE IS REPORTABLE UNDER CERCLA SECTION 103, THE NATIONAL RESPONSE CENTER MUST BE NOTIFIED IMMEDIATELY AT (800) 424-8802 OR (202) 426-2675 IN THE METROPOLITAN WASHINGTON, D.C. AREA (40 CFR 302.6).

PROTECTIVE EQUIPMENT

VENTILATION:

PROCESS ENCLOSURE RECOMMENDED TO MEET PUBLISHED EXPOSURE LIMITS.

RESPIRATOR:

THE FOLLOWING RESPIRATORS AND MAXIMUM USE CONCENTRATIONS ARE RECOMMENDATIONS BY THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, NIOSH POCKET GUIDE TO CHEMICAL HAZARDS OR NIOSH CRITERIA DOCUMENTS; OR DEPARTMENT OF LABOR, 29CFR1910 SUBPART 2. THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND IN THE WORK PLACE AND BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION.

SULFURIC ACID:

25 MG/M3- ANY POWERED AIR-PURIFYING RESPIRATOR WITH AN ACID GAS CARTRIDGE(S) AND HAVING A HIGH-EFFICIENCY PARTICULATE FILTER.
ANY SUPPLIED-AIR RESPIRATOR OPERATED IN A CONTINUOUS FLOW MODE.

50 MG/M3- ANY CHEMICAL CARTRIDGE RESPIRATOR WITH A FULL FACEPIECE AND ACID GAS CARTRIDGE(S) IN COMBINATION WITH A HIGH-EFFICIENCY PARTICULATE FILTER.

ANY SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE.
ANY SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE.
ANY AIR-PURIFYING FULL FACEPIECE RESPIRATOR (GAS MASK) WITH A

80 MG/M3- ANY SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE AND OPERATED IN A
PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

ESCAPE- ANY AIR-PURIFYING FULL FACEPIECE RESPIRATOR (GAS MASK) WITH A
CHIN-STYLE OR FRONT- OR BACK-MOUNTED ACID GAS CANISTER HAVING A
HIGH-EFFICIENCY PARTICULATE FILTER.
ANY APPROPRIATE ESCAPE-TYPE SELF-CONTAINED BREATHING APPARATUS.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN PRESSURE
DEMAND OR OTHER POSITIVE PRESSURE MODE.

SUPPLIED-AIR RESPIRATOR WITH FULL FACEPIECE AND OPERATED IN PRESSURE-DEMAND
OR OTHER POSITIVE PRESSURE MODE IN COMBINATION WITH AN AUXILIARY
SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER
POSITIVE PRESSURE MODE.

CLOTHING:

WEAR APPROPRIATE PROTECTIVE CLOTHING TO AVOID ANY POSSIBILITY OF SKIN CONTACT
WITH LIQUIDS CONTAINING MORE THAN 1% SULFURIC ACID. AVOID REPEATED OR
PROLONGED SKIN CONTACT WITH LIQUIDS CONTAINING 1% OR LESS SULFURIC ACID.

GLOVES:

EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS
SUBSTANCE.

EYE PROTECTION:

EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES AND A
FACESHIELD TO PREVENT CONTACT WITH THIS SUBSTANCE. CONTACT LENSES SHOULD NOT
BE WORN.

EMERGENCY WASH FACILITIES:

WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES AND/OR SKIN MAY BE
EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH FOUNTAIN
AND QUICK DRENCH SHOWER WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

AUTHORIZED - FISHER SCIENTIFIC GROUP, INC.
CREATION DATE: 11/28/84 REVISION DATE: 12/21/88

-ADDITIONAL INFORMATION-

THE INFORMATION BELOW IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST
INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF
MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO
SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS
SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE
INFORMATION FOR THEIR PARTICULAR PURPOSES.

BETZ INDUSTRIAL DIV.
1 QUALITY WAY, TREVOSE, PA.19053 (215) 953-2463
BETZ MATERIAL SAFETY DATA SHEET (PAGE 1 OF 3)
EMERGENCY TELEPHONE (HEALTH/ACCIDENT) (800)877-1940
EFFECTIVE DATE 02-16-91

PRODUCT: OPTI-MEEN- 85218

PRINTED: 11-18-92

REVISIONS TO SECTIONS: -;EDIT:APPENDIX

PRODUCT APPLICATION : NEUTRALIZING AMINE.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

METHOXYPROPYLAMINE, 3-***CAS#5332-73-0;FLAMMABLE LIQUID;CORROSIVE;
PEL/TLV:NONE

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS	(APPROX.) 12.0	ODOR: AMINE
FL.PT.(DEG.F): 154	P-M(CC)	SP.GR.(70F)OR DENSITY: 0.968
VAPOR PRESSURE(mmHG): 18		VAPOR DENSITY(AIR=1): <1
VISC cps70F: 18		%SOLUBILITY(WATER): 100
EVAP.RATE: ND	WATER=1	APPEARANCE: COLORLESS
PHYSICAL STATE: LIQUID		FREEZE POINT(DEG.F): <-30

-----SECTION 3-----REACTIVITY DATA-----

STABLE.MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK
CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

DUCT: OPTI-MEEN- 85218

---SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE

CORROSIVE TO SKIN.POTENTIAL SKIN SENSITIZER

ACUTE EYE EFFECTS ***

CORROSIVE TO THE EYES

ACUTE RESPIRATORY EFFECTS *** PRIMARY ROUTE OF EXPOSURE

VAPORS,GASES,MISTS AND/OR AEROSOLS CAUSE IRRITATION TO UPPER
RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***

PROLONGED OR REPEATED CONTACT MAY CAUSE TISSUE NECROSIS.

MEDICAL CONDITIONS AGGRAVATED ***

NOT KNOWN

SYMPTOMS OF EXPOSURE ***

INHALATION MAY CAUSE IRRITATION OF MUCOUS MEMBRANES AND RESPIRATORY TRACT;
SKIN CONTACT CAUSES SEVERE IRRITATION OR BURNS.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT***

REMOVE CLOTHING.WASH AREA WITH LARGE AMOUNTS OF SOAP SOLUTION OR WATER
FOR 15 MIN.IMMEDIATELY CONTACT PHYSICIAN

EYE CONTACT***

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A
PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***

REMOVE VICTIM FROM CONTAMINATED AREA.APPLY NECESSARY FIRST AID
TREATMENT.IMMEDIATELY CONTACT A PHYSICIAN.

INGESTION***

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DO NOT INDUCE VOMITING.IMMED.CONTACT PHYSICIAN.DILUTE CONTENTS OF
STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6-----SPILL,DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS***

VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB
ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE
CHARACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL,
SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.
REMOVE IGNITION SOURCES.FLUSH AREA WITH WATER.SPREAD
SAND/GRIT.

DISPOSAL INSTRUCTIONS***

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY
SEWER TREATMENT FACILITY,IN ACCORDANCE WITH ANY LOCAL AGREEMENT,A
PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT
PRODUCT(AS IS) -

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING
APPARATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA:
DRY CHEMICAL,CARBON DIOXIDE,FOAM OR WATER

BETZ MATERIAL SAFETY DATA SHEET

(PAGE 3 OF 3)

PRODUCT: OPTI-MEEN- 85218

-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

VENTILATION PROTECTION***

ADEQUATE VENTILATION

RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES.

RECOMMENDED SKIN PROTECTION***

GAUNTLET-TYPE RUBBER GLOVES, CHEMICAL RESISTANT APRON

WASH OFF AFTER EACH USE. REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES. FACE SHIELD

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

STORE IN COOL VENTILATED LOCATION. STORE AWAY FROM OXIDIZERS

HANDLING INSTRUCTIONS***

COMBUSTIBLE. DO NOT USE AROUND SPARKS OR FLAMES. BOND CONTAINERS DURING FILLING OR DISCHARGE WHEN PERFORMED AT TEMPERATURES AT OR ABOVE THE PRODUCT FLASH POINT.

THIS MSDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: D002=CORROSIVE (SKIN, PH)

...DOT HAZARD/UN#/ER GUIDE# IS: CORROSIVE TO SKIN. COMBUSTIBLE UN1760/#60

...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

...SARA SECTION 302 CHEMICALS: NONE

...SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE (ACUTE), DELAYED (CHRONIC) AND FIRE

...MICHIGAN CRITICAL MATERIALS: NONE

NFPA/HMIS : HEALTH - 3 ; FIRE - 2 ; REACTIVITY - 0 ; SPECIAL - CORR ; PE - D

RECEIVED

JUL 19 1993

Water Quality Applications

BETZ MATERIAL
SAFETY DATA SHEET

EFFECTIVE DATE: 02-SEP-1995

PRINTED DATE: 02-SEP-1995

1) CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : BETZ POLYMER CDP-90192

PRODUCT APPLICATION AREA: COAGULANT.

COMPANY ADDRESS:

Betz Laboratories, Inc.
4636 Somerton Road, Trevose, Pa. 19053
Information phone number: (215) - 355-3300

EMERGENCY TELEPHONE (HEALTH/ACCIDENT): (800)-877-1940 (USA)

2) COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the OSHA HAZARD COMMUNICATIONS STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

CAS#	CHEMICAL NAME
25988-97-0	QUATERNIZED POLYAMINE Irritant (eyes)

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

Post-It® Fax Note	7671	Date	9-22	# of pages	7
To	Joel Tomme		From	Jesse M	
Co./Dept.			Co.		
Phone #			Phone #		
Fax #	903 938 4270		Fax #		

PRODUCT NAME : BETZ POLYMER CDP-90192

EFFECTIVE DATE: 02-SEP-1995

3) HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING

May cause slight irritation to the skin. Severe irritant to the eyes. Vapors, gases, mists and/or aerosols may cause irritation to upper respiratory tract.

DOT hazard is not applicable

Emergency Response Guide is not applicable

Odor: Amine; Appearance: Colorless To Yellow, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type). Proper fire-extinguishing media:

Dry chemical/CO2/foam or water. Slippery condition. Use sand/grit.

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:

Primary route of exposure; May cause slight irritation to the skin.

ACUTE EYE EFFECTS:

Severe irritant to the eyes.

ACUTE RESPIRATORY EFFECTS:

Vapors, gases, mists and/or aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:

May cause slight gastrointestinal irritation.

TARGET ORGANS:

No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:

Not known.

SYMPTOMS OF EXPOSURE:

May cause redness or itching of skin.

PRODUCT NAME : BETZ POLYMER CDP-90192

EFFECTIVE DATE: 02-SEP-1995

4) FIRST AID MEASURES

SKIN CONTACT:

Remove contaminated clothing. Wash exposed area with a large quantity of soap solution or water for 15 minutes.

EYE CONTACT:

Immediately flush eyes with water for 15 minutes. Immediately contact a physician for additional treatment.

INHALATION:

Remove victim from contaminated area to fresh air. Apply appropriate first aid treatment as necessary.

INGESTION:

Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

5) FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:

Dry chemical/CO2/foam or water. Slippery condition. Use sand/grit.

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:

> 200F P-M(CC)

6) ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container.

Flush area with water. Wet area may be slippery. Spread sand/grit.

DISPOSAL INSTRUCTIONS:

Water contaminated with this product may be sent to a sanitary sewer treatment facility, in accordance with any local agreement, a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7) HANDLING AND STORAGE

HANDLING:

Normal chemical handling.

STORAGE:

Keep containers closed when not in use. Store in cool ventilated location. Store away from oxidizers.

PRODUCT NAME : BETZ POLYMER CDP-90192

EFFECTIVE DATE: 02-SEP-1995

8) EXPOSURE CONTROLS/PERSONAL PROTECTION

CHEMICAL NAME	EXPOSURE LIMITS
---------------	-----------------

QUATERNIZED POLYAMINE

PEL (OSHA): NOT DETERMINED

TLV (ACGIH): NOT DETERMINED

ENGINEERING CONTROLS:

Adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT:

Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Use air-purifying respirators within use limitations associated with the equipment or else use supplied air-respirators. If air-purifying respirator use is appropriate, use a respirator with organic vapor cartridges.

SKIN PROTECTION:

Rubber gloves. Wash off after each use. Replace as necessary.

EYE PROTECTION:

Splash proof chemical goggles.

9) PHYSICAL AND CHEMICAL PROPERTIES

Specific Grav. (70F)	1.113	Vapor Pressure (mmHG)	- 18.0
Freeze Point (F)	10.00	Vapor Density (air=1)	< 1.00
viscosity (cps 70F)	66	% Solubility (water)	100.0

Odor

Amine

Appearance

Colorless To Yellow

Physical State

Liquid

Flash Point (F)

> 200 P-M(CC)

H As Is (approx.)

7.1

Evaporation Rate (Butyl Acetate=1)

< 1.00

A = not applicable ND = not determined

PRODUCT NAME : BETZ POLYMER CDP-90192

EFFECTIVE DATE: 02-SEP-1995

10) STABILITY AND REACTIVITY

STABILITY:

Stable

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

May react with strong oxidizers.

DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

BETZ INTERNAL PUMPOUT/CLEANOUT CATEGORIES:

"B"

11) TOXICOLOGICAL INFORMATION

Oral LD50 RABBIT:

1,200 mg/kg

90 Day Feed Study RAT:

NEGATIVE

90 Day Feed Study DOG:

NEGATIVE

Dermal LD50 RABBIT:

>2,000 mg/kg

NOTE - Estimated value

12) ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Rainbow Trout 96 Hour Static Screen

100% Mortality: 1 mg/L

0% Mortality: .1 mg/L

Daphnia magna 48 Hour Static Acute Bioassay

LC50: .18 mg/L

Bluegill Sunfish 96 Hour Static Acute Bioassay

LC50: .46 mg/L

No Effect Level: .32 mg/L

BIODEGRADATION

COD (mg/gm): 347

TOC (mg/gm): 153

BOD-5 (mg/gm): 5

BOD-28 (mg/gm): 9

PRODUCT NAME : BETZ POLYMER CDP-90192

EFFECTIVE DATE: 02-SEP-1991

13) DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
Not applicable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14) TRANSPORT INFORMATION

DOT HAZARD: Not Applicable
UN / NA NUMBER: Not applicable
DOT EMERGENCY RESPONSE GUIDE #: Not applicable

15) REGULATORY INFORMATION

TSCA:

All components of this product are listed in the TSCA inventory.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

POTABLE WATER APPROVAL:

EPA up to 50ppm-also Florida

POTABLE WATER APPROVAL:

EPA up to 50ppm-also Florida

SARA SECTION 312 HAZARD CLASS:

Immediate(acute)

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC

ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:

No regulated constituent present at OSHA thresholds

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

PRODUCT NAME : BETZ POLYMER CDP-90192

EFFECTIVE DATE: 02-SEP-199

16) OTHER INFORMATION

NFPA/HMIS		CODE TRANSLATION
Health	2	Moderate Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	B	Goggles, Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
	-----	-----	-----
MSDS status:	22-AUG-95	REVISED FORMAT	

MATERIAL SAFETY DATA SHEET

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: SODIUM PHOSPHATE DIBASIC, ANHYDROUS ACS

PRODUCT DESCRIPTION:

DATE PREPARED: 15 MAY 2000

SUPPLIER NAME AND ADDRESS: ACS Chemical, Inc.
660 Mantoloking Rd.
Brick, NJ 08724

SUPPLIER PHONE: 732-477-9133

EMERGENCY PHONE - 24 HOURS: CALL CHEM-TEL, INC. (800) 255-3924

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	WT. %	OSHA PEL	ACGIH TLV	CAS REGISTRY#
SODIUM PHOSPHATE DIBASIC, ANYDROUS, ACS				7758-79-4

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW IRRITANT! IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

POTENTIAL HEALTH EFFECTS

INHALATION: IRRITANT.
EYE CONTACT: IRRITATING TO EYES.
SKIN CONTACT: IRRITATING TO SKIN.
INGESTION: IRRITANT.
CHRONIC: N/A

HMIS HAZARD CODE: HEALTH: FLAMMABILITY:0 REACTIVITY:

SECTION 4 FIRST AID MEASURES

INHALATION: IF INHALED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.
EYE CONTACT: IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF WATER AND SEEK MEDICAL ADVICE.
SKIN CONTACT: IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS AMOUNTS OF WATER AND SEEK MEDICAL ADVICE.
INGESTION: IF SWALLOWED, WASH OUT MOUTH WITH WATER PORVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.

SECTION 5 FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: N/A)
FLAMMABLE LIMITS LFL.....N/A UFL.....N/A
LEL.....N/A UEL.....N/A

GENERAL HAZARD.....N/A

FIRE FIGHTING INSTRUCTIONS.....: USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.

FIRE FIGHTING EQUIPMENT.....: WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH EYES AND SKIN.

HAZARDOUS COMBUSTION PRODUCTS.... EMITS TOXIC FUMES UNDER FIRE CONDITONS.

SECTION 6 ACCIDENTAL RELEASE MEASURES

LAND SPILL: WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES. SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL. AVOID RAISING DUST. VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

WATER SPILL: N/A

SECTION 7 HANDLING AND STORAGE

STORAGE TEMPERATURE: AMBIENT
STORAGE PRESSURE: ATMOSPHERIC
GENERAL: WASH THOROUGHLY AFTER HANDLING. KEEP TIGHTLY CLOSED. STORE IN A COOL DRY PLACE.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING CONTROLS
VENTILATION: MECHANICAL

PERSONAL PROTECTION

RESPIRATOR: WEAR APPROPRIATE NIOSH/MSHA APPROVED RESPIRATOR.
PROTECTIVE CLOTHING: CHEMICAL RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
• **ADDITIONAL INFORMATION:** SAFETY SHOWER AND EYE BATH RECOMMENDED.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE:	TO WATER	VAPOR DENSITY:	4.9 (air=1)
SPECIFIC GRAVITY.....:	N/A	EVAPORATION RATE.....TO WATER	
SOLUBILITY IN WATER.....:	N/A	(n-Butyl Acetate=1)	
pH.....:	N/A	FREEZING POINT.....:	N/A
BOILING POINT.....:	N/A	ODOR.....:	N/A
VISCOSITY.....:	N/A		
APPEARANCE.....:	N/A		
PHYSICAL STATE.....:	SOLID		

SECTION 10 STABILITY AND REACTIVITY

GENERAL: N/A
INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID: STRONG ACIDS.
HAZARDOUS DECOMPOSITION: NATURE OF DECOMPOSITION PRODUCTS NOT KNOWN.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE EFFECTS: MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION. CAUSES EYE AND SKIN IRRITATION. MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT. TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

SECTION 12 ECOLOGICAL INFORMATION

NO DATA AVAILABLE

SECTION 13 DISPOSAL CONSIDERATIONS

FOR SMALL QUANTITIES: CAUTIOUSLY ADD TO A LARGE STIRRED EXCESS OF WATER. ADJUST THE PH TO NEUTRAL, SEPARATE ANY INSOLUBLE SOLIDS OR LIQUIDS AND PACKAGE THEM FOR HAZARDOUS WASTE DISPOSAL. FLUSH THE AQUEOUS SOLUTION DOWN THE DRAIN WITH PLENTY OF WATER. THE HYDROLYSIS AND NEUTRALIZATION REACTIONS MAY GENERATE HEAT AND FUMES WHICH CAN BE CONTROLLED BY THE RATE OF ADDITION.

DISPOSAL IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION 14 TRANSPORT INFORMATION

DOT (Department Of Transportation)

PROPER SHIPPING NAME: N/A

UN NUMBER: N/A

HAZARD CLASS: N/A

PACKING GROUP: N/A

EMERGENCY PHONE - 24 HOURS: CALL CHEM-TEL, INC. (800) 255-3924

SECTION 15 REGULATORY INFORMATION

EUROPEAN INFORMATION: IRRITANT. IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
WEAR SUITABLE PROTECTIVE CLOTHING.

OEL-MAK

EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION.

FEREAC 54, 7740, 89

NOHS 1974: 83514; NIS 85; TNF 6564; NOS 60; TNE 57176.

NOBS 1983: HZD 83514; NIS 166; TNF 21015; NOS 135; TNE 1230592; TFE 912048.

SECTION 16 OTHER INFORMATION

The information contained herein is provided in good faith and is believed to be correct as of the date hereof. However, ACS Chemical, Inc., makes no representation as to the comprehensiveness or accuracy of the information. It is expected that individuals receiving the information will exercise their independent judgment in determining its appropriateness for a particular purpose. Accordingly, ACS Chemical, Inc., will not be responsible for damages of any kind resulting from the use of or reliance upon such information.

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MATERIAL SAFETY DATA SHEET

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: POTASSIUM PHOSPHATE DIBASIC, ANHYDROUS ACS REAGENT
PRODUCT DESCRIPTION:

DATE PREPARED: 12-AMU-2000

SLP:

EMERGENCY PHONE - 24 HOURS: CALL CHEM-TEL, INC. (800) 255-3924

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	WT. %	OSHA PEL	ACGIH TLV	CAS REGISTRY#
POTASSIUM PHOSPHATE DIBASIC, ANHYDROUS				7758-11-4

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

POTENTIAL HEALTH EFFECTS

INHALATION: MAY BE HARMFUL IF INHALED.
EYE CONTACT: MAY CAUSE IRRITATION.
SKIN CONTACT: MAY BE HARMFUL ABSORBED THROUGH SKIN.
INGESTION: MAY BE HARMFUL IF SWALLOWED.
CHRONIC: N/A

HMIS HAZARD CODE: HEALTH: FLAMMABILITY:0 REACTIVITY:

SECTION 4 FIRST AID MEASURES

INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
EYE CONTACT: IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. TO ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS WITH FINGERS.
SKIN CONTACT: WASH WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING.
INGESTION: WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.

SECTION 5 FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: N/A)
FLAMMABLE LIMITS LFL.....N/A UFL.....N/A
LEL.....N/A UEL.....N/A

GENERAL HAZARD.....N/A

FIRE FIGHTING INSTRUCTIONS.....

WATER SPRAY, CARBONDIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

FIRE FIGHTING EQUIPMENT.....

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

HAZARDOUS COMBUSTION PRODUCTS.....

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6 ACCIDENTAL RELEASE MEASURES

LAND SPILL: USE PROTECTIVE CLOTHING, CHEMICAL SAFETY GOGGLES, COMPATIBLE CHEMICAL RESISTANT GLOVES AND MASK. SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL. AVOID RAISING DUST. VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

WATER SPILL: N/A

SECTION 7 HANDLING AND STORAGE

STORAGE TEMPERATURE: AMBIENT
STORAGE PRESSURE: ATMOSPHERIC
GENERAL: WASH THOROUGHLY AFTER HANDLING. KEEP TIGHTLY CLOSED. STORE IN A COOL DRY PLACE.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING CONTROLS
VENTILATION: MECHANICAL

PERSONAL PROTECTION

RESPIRATOR: NIOSH/MSHA APPROVED RESPIRATOR IN NONVENTILATED AREAS AND/OR FOR EXPOSURE ABOVE THE AGGIH TLV.

PROTECTIVE CLOTHING: CHEMICAL SAFETY GOGGLES, COMPATIBLE CHEMICAL RESISTANT GLOVES.

• **ADDITIONAL INFORMATION:** SAFETY SHOWERS AND EYE BATH.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE:	TO WATER	VAPOR DENSITY:	TO WATER
SPECIFIC GRAVITY:	N/A	(air=1)	
SOLUBILITY IN WATER:	N/A	EVAPORATION RATE:	TO WATER
pH:	N/A	(n-Butyl Acetate=1)	
BOILING POINT:	N/A	FREEZING POINT:	N/A
VISCOSITY:	N/A	ODOR:	N/A
APPEARANCE:	WHITE POWDER		
PHYSICAL STATE:	N/A		

SECTION 10 STABILITY AND REACTIVITY

GENERAL: N/A
INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID: STRONG OXIDIZING AGENTS, PROTECT FROM MOISTURE.
HAZARDOUS DECOMPOSITION: NATURE OF DECOMPOSITION PRODUCTS NOT KNOWN.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE EFFECTS: MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION. MAY CAUSE EYE AND SKIN IRRITATION. MATERIAL MAY BE IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT. TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL AND TOXOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

SECTION 12 ECOLOGICAL INFORMATION

NO DATA AVAILABLE

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION 14 TRANSPORT INFORMATION

DOT (Department Of Transportation)

PROPER SHIPPING NAME: N/A

UN NUMBER: N/A

HAZARD CLASS: N/A

PACKING GROUP: N/A

EMERGENCY PHONE - 24 HOURS: CALL CHEM-TEL, INC. (800) 255-3924

SECTION 15 REGULATORY INFORMATION

NO DATA AVAILABLE

SECTION 16 OTHER INFORMATION

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733 Heights Boulevard ★ Houston Texas 77007
(713) 802-1761 ★ FAX: (713) 869-0680

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT IDENTIFICATION

POLYMER 577

FLOCCULANT

NFPA Rating	Red	Blue	Yellow
	1	1	0

Cationic Polymer

SYNONYMS: Polyquaternary amine in water solution

MSDS Date 12.12.96

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

OSHA Regulated Components:

NO.	COMPONENT	CAS REG NO.	WEIGHT (%)
	No permissible Exposure Limits (PEV/TLV) have been established by OSHA or ACGIH		

See SECTION 8, Exposure Controls/Personal Protection

SECTION 3 - HAZARDOUS IDENTIFICATION

CAUTION: MAY CAUSE SKIN IRRITATION

PRIMARY ROUTES OF EXPOSURE

Skin Contact, Eye Contact

EYE CONTACT

May cause skin/eye irritation

SECTION 4 - FIRST AID MEASURES

EYE CONTACT

Immediately flush eyes with a large amount of water for at least 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT

Wash skin thoroughly with soap and water. If irritation persists, seek medical attention. Contaminated clothing should be washed before reuse.

INGESTION

Give large amounts of water. Call a physician. Never give anything to an unconscious person.

INHALATION - Material is not expected to be harmful if inhaled. If inhaled, remove to fresh air.

INSTABILITY

This material is considered stable.

INCOMPATIBILITIES

Strong oxidizing agent. Contact with copper, aluminum or iron may cause corrosion and product degradation.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

Thermal decomposition or combustion may produce carbon monoxide, carbon dioxide, ammonia, oxides of nitrogen and/or hydrogen chloride.

HAZARDOUS POLYMERIZATION

Product will not undergo polymerization.

SECTION 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

Effects of overexposure:

Acute oral (rat) LD50, acute dermal (rabbit) LD50 are estimated to be 4.67 g/kg greater than 10.0 g/kg. The 4 hour (rat) LC50 values are estimated to be greater than 15,000 ppm. No skin or eye irritation was produced during primary irritation studies with rabbits. No signs of dermal irritation or sensitization were produced during repeat insult patch test with human subjects.

Toxicological information on the OSHA regulated components of this product is as follows::

Product contains material(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

SECTION 12 - ECOLOGICAL INFORMATION

5 - Day BOD: <600 mg/L Oxygen

Algae (*Selenastrum capricornutum*), 96 hr EbC50 = 0.031 mg/L; 96 hr ErC50 = 0.058 mg/L
LC50 determinations without added suspended solids overestimate the true toxicity of cationic polymers. Suspended solids and other dissolved organic materials like humic acid are present in natural waters and reduce the effective concentration of the polymer and thereby its toxicity.

LC50

BLUEGILL, 96 HOUR	0.39 mg/L
TROUT, 96 HOUR	0.16 mg/L
DAPHNIA, 48 HOUR	0.6 mg/L

OCTANOL/H₂O PARTITION COEFF.

Not available

SECTION 13 - DISPOSAL CONSIDERATIONS

PROCEDURE

The information of RCRA waste classification and disposal methodology provided below applies only to the product as supplied. If the material has been altered or contaminated, or it has exceeded the recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR part 261 et seq.) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCA "hazardous waste characteristics". Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this MSDS is not intended to indicate if the product is a "listed hazardous waste". RCRA Hazardous Waste Characteristics. There are four characteristics defined in 40 CFR Section 261.21-61.24: *Ignitability, Corrosivity, Reactivity, and Toxicity*. To determine Ignitability, see Section 5 of this MSDS (flash point). For corrosivity, see Section 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 19 (incompatible materials). For Toxicity, see Section 2 (composition). Federal regulations are subject to change. State and local requirements,

24-HOUR EMERGENCY CONTACT:
CHEMTREC: (800) 424-9300

which may differ from or be more stringent than the federal regulation, may also apply to the classification of the material if it is to be disposed. The foregoing has been provided for information only; the person generating the waste is responsible for determining the waste classification and disposal method. Follow all federal, state and local regulations.

SECTION 14 - TRANSPORT INFORMATION

N/A - Not Applicable; N/R - Not Regulated

	D.O.T	IMO	ICAO/IATA	TRANSPORT CANADA
SHIPPING NAME	N/A ; N/R	N/A ; N/R	N/A ; N/R	N/A ; N/R
HAZARD CLASSIFICATION	N/A	N/A	N/A	N/A
UN NUMBER	N/A	N/A	N/A	N/A
IMDG PAGE	N/A	N/A	N/A	N/A
DOT HAZARDOUS SUBSTANCES	N/A	N/A	N/A	N/A
TRANSPORT LABEL REQUIRED	None	None	None	None
PACKING INSTR	Required	Required	Required	Required
MAX NET QTY	N/A	N/A	N/A	N/A
TECHNICAL NAME (NOS)	N/A	N/A	N/A	N/A

SECTION 15 - REGULATORY INFORMATION

TSCA	This product is manufactured in compliance with all provisions of the Toxic Substances control Act, 15 U.S.C. 2601 et. seq.
CANADA DSL	Components of this product have been reported to Environment Canada in accordance with subsection 25 of the Canadian Environmental Protection Act and are included Domestic Substances List.
EEC EINECS	All components of this product are included in the European Inventory of Existing Chemical Substances (EINECS) in compliance with Council Directive 67/548/EEC and its amendments.

COMPONENT	CAS. NO	%	TPQ (lb.)	RQ (lb.)	S313	TSCA 12B
1,3- Dichloropropanol	000096-23-1	<0.05	None	None	NO	YES

SECTION 16 - OTHER INFORMATION

ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
MAK	Maximum Workplace Concentrations
TLV	Threshold Limit Value
PEL	Permissible Exposure Limit
TWA	Time Weighted Average
STEL	Short-Term Exposure Limit
BAC	Butyl acetate

The information presented herein is based on the content of a Material Safety Data Sheet provided by the manufacturer or other responsible party. Although the information provided herein is an accurate presentation of the original Material Safety Data Sheet safety information, no warranty or representation, expressed or implied, is made as to the accuracy or completeness of the foregoing data and safety information.



FINI ENTERPRISES, INC.
P.O. BOX 808
CELINA, TEXAS 75009
(214) 382-2381
(800) 441-2559
(214) 382-3211 (FAX)



MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Manufacturer's Name:	Fe-3, Inc.	Regular Telephone No. 1 (214) 382-2381 Emergency Telephone No. (800) 424-9300
Address:	Business Rt. 289 North, Celina, Texas 75009	
Trade Name:	Fe ³	
Synonyms:	FERRIC SULFATE SOLUTION	
Shipping Name:	DOT CORROSIVE LIQUID, N.O.S. CORROSIVE MATERIAL (LIQUID FERRIC SULFATE — 50% WATER NA 1760)	

II. HAZARDOUS INGREDIENTS

Material or Component (Typical)	Cas No.	% w/w	Hazard Data
Ferric Sulfate	10028-22-5	49.0	Health hazard: Product is toxic orally, is corrosive to the eye, and will burn the skin.
Free Sulfuric Acid	7664-93-9	5-1.0	
Water (balance of formulation)			Aquatic toxicity: Ferric sulfate is listed as toxic to aquatic life, Category C. 40 CFR Parts 116-118.

III. PHYSICAL DATA

Boiling Point, 750 mm hg	Approx. 212°F	Freezing Point: Does not freeze at 0°F
Specific Gravity (H ₂ O=1)	1.425 to 1.455	Vapor Pressure: NA
Vapor Density (Air=1)	NA	Solubility in H ₂ O% by Wt. Infinite
% Volatiles by Vol.	NA	Evaporation Rate (Butyl Acetate - 1)
Appearance and Odor	Red-Brown solution. No detectable odor.	Ph (as is) Approximately 1.0 Ph (1% soln) Approximately 4.8

IV. FIRE AND EXPLOSION DATA

Flash Point (Test Method)	N.A.	Autoignition Temperature	N.A.
Flammable Limits in Air, % by Vol.	Lower N.A.	Upper N.A.	
Extinguishing Media	Product does not burn or support flame. If product is present in a fire, water, CO ₂ or dry chemical may be used. Product is highly acidic and if in open container avoid splashing.		
Special Fire Fighting Proc.	Do not allow product or water containing product to enter a navigable stream. At temperatures above 600°C, product decomposes to iron oxide and sulfur trioxide.		
Unusual Fire & Explosion Hazard	None known.		

V. HEALTH HAZARD INFORMATION

Health Hazard Data	Hazard Classification	Basis for Classification	Source
Routes of Exposure Inhalation	Not determined, but expected to be low due to other toxicological tests, physical and chemical characteristics.	NA	NA
Skin Contact	Not a primary skin irritant by FHSA standards.	Primary dermal irritation index = 0.0 for 24 and 72 hours.	Laboratory test in accord with FHSA procedure.
Skin Absorption	Not toxic dermally by FHSA standards.	Est. dermal LD ₅₀ (Rabbit) = (Male) Greater than 2.0 g/kg body weight (Female) Greater than 2.0 g/kg body weight	Laboratory test in accord with FHSA procedure.
Eye Contact	Corrosive to the eye by FHSA standards.	Eye irritation scores: 24 hours..... 45.2 48 hours..... 56.2 72 hours..... 56.3 7 days..... 63.4	Laboratory tests in accord with FHSA procedure.
Ingestion	Toxic by FHSA standards.	Oral LD ₅₀ . (Rats-male) = Between 2.5 and 5.0 g/kg body weight. (Rats-female) = Between 2.5 and 5.0 g/kg body weight.	Laboratory tests in accord with FHSA procedure.

EFFECTS OF OVEREXPOSURE:

Acute Overexposure: None known except as listed in Section V above.

Chronic Overexposure: None known except as listed in Section V above.

EMERGENCY AND FIRST AID PROCEDURES

EYES	Immediately irrigate with large amounts of water for at least 15 minutes. Hold eyelids apart during irrigation. Send patient to a physician immediately.
SKIN	Flush with water while removing clothing and shoes. Continue to flush for at least 15 minutes. Call a physician. Wash clothes before reuse.
INHALATION	Remove from area and give artificial respiration if needed and seek medical assistance.
INGESTION	Treat as a corrosive liquid. Drink large quantities of water or milk to reduce concentration and neutralize acid. Do not induce vomiting. Call physician immediately.

VI. REACTIVITY DATA**CONDITIONS CONTRIBUTING TO INSTABILITY:**

None Known.

INCOMPATIBILITY:

Product solution is corrosive to mild steel, copper, copper alloys and galvanized steel. May be corrosive to paints, enamels, and concrete. Reacts with lime and other basic materials to form insoluble iron salts.

HAZARDOUS DECOMPOSITION PRODUCTS:

None normally. At temperatures above 600°C, sulfur trioxide may be released.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION:

None known.

VII. DISPOSAL, SPILL OR LEAK PROCEDURE:**AQUATIC TOXICITY (e.g., 96 HR. TLM):**

No data is known to be available. EPA has rated ferric sulfate in Category C in the Waters Program hazardous substance list in 40 CFR Parts 116-118.

WASTE DISPOSAL METHOD:

Neutralize with lime, soda ash, or bicarbonate and remove to approved landfill.

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Prohibit product from running into streams or navigable waters. Neutralize and remove to approved landfill. Wash down spill area with water. Check with waste treatment plant before flushing down large amounts of spilled product.

NEUTRALIZING CHEMICALS:

Lime (calcium carbonate, calcium hydroxide, calcium oxide), soda ash or sodium bicarbonate.

VIII. SPECIAL PROTECTION INFORMATION:**VENTILATION REQUIREMENTS:**

No special ventilation is believed to be necessary under normal use conditions.

SPECIFIC PERSONAL PROTECTION EQUIPMENT:**RESPIRATORY:**

None known necessary under normal use. If mists occur, or may occur, use a respirator having an activated carbon filter suitable for sulfuric acid mists.

EYE:

Chemical goggles should be worn when handling this product as it is corrosive to the eye.

GLOVES:

Chemical or rubber gloves should be worn.

OTHER CLOTHING AND EQUIPMENT:

Acid resistant clothing is recommended. Safety shoes are recommended when handling product in drums.

IX. SPECIAL PRECAUTIONS:

There should be a substance placard with UN1760, being of Hazard Class 8 and packing group III, 8, UN1760, III

PRECAUTIONARY STATEMENTS:

Product is corrosive to mild steel and containers should bear a corrosive D.O.T. label. There should be a substance placard with UN1760.

OTHER HANDLING AND STORAGE REQUIREMENTS:

Liquid Ferric Sulfate solution is corrosive to mild steel. Storage and equipment materials should include fiberglass, reinforced plastics, plastics, rubber, lead, type 304 or better grades of stainless steel.

ADDITIONAL REGULATORY CONCERNS:**FEDERAL:****FDA:****USDA:****USPSC:**

SCA: Is this product, or all its ingredients, being certified for inclusion on the Toxic Substances Control Act inventory of chemical substances? YES.

OTHER: The ferric sulfate meets the AWWA standard for Ferric Sulfate in potable water. Standard AWWA B406-87.

STATE:

SHA: Product is a hazardous material as defined by 29 CFR Paragraph 1910, 1200 because it is corrosive to the eye.
Product is *not* listed by the National Toxicology Program, the International Agency for Research on Cancer, nor the Registry of Toxic Effects of Chemical Substances (1981-82) as a carcinogen or potential carcinogen.

ARA TITLE III: Product contains the following listed toxic chemicals which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA TITLE III) and 40 CFR, Part 372.

Listed Toxic Chemical
Sulfuric Acid

CAS#
7664-93-9

Max % By Wgt.
.5-1.0

RQ, CORROSIVE LIQUIDS, N.O.S.
(Contains FERRIC SULFATE)
8, UN1760, PG III
RQ = 1,000 Lbs.
LIQUID FERRIC SULFATE

ATTACHMENT F

SUMMARY OF PROPOSED PERMIT AMENDMENTS

SCOPE OF PROPOSED PERMIT CHANGES

Eliminate monitoring for TDS at Outfall 002

The facility currently monitors for Total Dissolved Solids (TDS) at Outfall 002 at a frequency of once per month. There has been little variability in the TDS data, primarily due to the fact that the Outfall 002 discharge is predominantly comprised of Once-through Cooling Water. Once-through Cooling Water is a non-deleterious wastewater that has a very small potential to contribute pollutants to receiving waters. Therefore, any monitoring for TDS at Outfall 002 should essentially be representative of TDS concentrations of the reservoir's ambient water.

There are no specific monitoring requirements contained in the 40CFR part 423 Steam Electric Generation categorical requirements to monitor for TDS in Once-through Cooling Water. In consideration of the aforementioned facts, the facility requests to have the requirement to monitor TDS at Outfall 002 removed. If TNRCC determines that continued monitoring for TDS is necessary, the facility requests that the frequency of monitoring be reduced from once per month to once per quarter. Your consideration with respect to this request is appreciated.

Eliminate Oil & Grease Monitoring and reduce TSS Monitoring at Outfalls 003, 004, and 005

The facility also requests to have the monitoring required for Oil & Grease at Outfalls 003, 004, and 005 removed from the permit. In addition, the facility requests to have the TSS monitoring requirements reduced at Outfalls 003, 004, and 005 from once per week to once per month. The existing permit requires Oil & Grease and TSS to be monitored at Outfalls 003, 004, and 005 at a frequency of once per week (when discharged).

Outfalls 003, 004, and 005 are all outfalls associated with waste management units (ponds) that collect only storm water runoff from non-process, product or waste storage areas. The outfalls themselves are operated in a controlled manner where effluent may be either physically and/or chemically treated prior to monitoring and discharge.

During processing of the facility's previous permit, Oil & Grease and TSS monitoring were included in the permit in consideration of requirements in 40CFR part 423.15 (as referenced in the fact sheet for the previous permit). 40CFR part 423.15 is a section of the regulations covering "New Source Performance Standards" (NSPS) for Steam Electric Generating facilities, and contains no specific requirements for monitoring discharges of Storm Water. Additional requirements were attributed to the "best professional judgment (BPJ)" of the permit writer. The facility contends that the areas contributing Storm Water to the aforementioned controlled-discharged ponds are not very likely to be susceptible to Oil & Grease contamination (namely the lignite storage area, the limestone storage area, and the fly ash landfill). In conjunction with the unlikely potential for Oil & Grease contamination, the ponds are operated such that all effluents receive necessary treatment prior to discharge. If Oil & Grease contamination was present, a visible sheen would most likely be visible on the surface of the affected pond, and any such

contamination could be removed through other means of treatment prior to initiating a controlled discharge.

The facility has an excellent history of compliance with respect to Oil & Grease monitoring for the discharges from the aforementioned Outfalls. In fact, there has never been any detection of Oil & Grease at Outfalls 003, 004, or 005. This compliance history is an available record in the DMR forms that have been submitted to the TNRCC on a monthly basis, and is summarized for your convenience in the table on the following page. Please be advised that no data was summarized for Outfall 003 due to the fact that there was no discharge from this Outfall during at least the last two years. The facility respectfully requests to have Oil & Grease monitoring removed from the wastewater permit for Outfalls 003, 004, and 005. If TNRCC determines that continued monitoring for Oil & Grease is necessary, the facility requests, at a minimum, that the monitoring frequency be reduced from once per week to once per month.

In addition, the facility requests to have a reduction in the monitoring frequency for TSS at Outfalls 003, 004, and 005. The existing permit requires TSS to be monitored at a frequency of once per week (when discharging). The facility respectfully requests to have the monitoring frequency reduced to once per month (when discharging). The facility requests this reduced monitoring frequency due to the treatment methods and controlled discharge for the aforementioned ponds. Due to the treatment methods and the controlled nature of the discharges from the ponds, the likelihood of any TSS violations is remote. The facility has an excellent compliance history with respect to TSS monitoring at these Outfalls. This compliance history is summarized in the table on the following page for purposes of convenience. Please be informed again that no data was summarized for Outfall 003 due to the fact that there was no discharge from this Outfall during at least the last two years. Your consideration with respect to the aforementioned requests is appreciated.

MONTH	004		005	
	TSS	OIL & GREASE	TSS	OIL & GREASE
	MAX (mg/l)	MAX (mg/l)	MAX (mg/l)	MAX (mg/l)
Apr-99	N.D.	N.D.	4	2
May-99	6	1	5	1
Jun-99	N.D.	N.D.	N.D.	N.D.
Jul-99	N.D.	N.D.	4	1
Aug-99	N.D.	N.D.	N.D.	N.D.
Sep-99	N.D.	N.D.	N.D.	N.D.
Oct-99	N.D.	N.D.	N.D.	N.D.
Nov-99	N.D.	N.D.	N.D.	N.D.
Dec-99	N.D.	N.D.	N.D.	N.D.
Jan-00	N.D.	N.D.	5	1
Feb-00	N.D.	N.D.	N.D.	N.D.
Mar-00	N.D.	N.D.	22	1
Apr-00	76	1	16	1
May-00	4	1	10	1
Jun-00	8	1	9	1
Jul-00	N.D.	N.D.	N.D.	N.D.
Aug-00	N.D.	N.D.	N.D.	N.D.
Sep-00	N.D.	N.D.	N.D.	N.D.
Oct-00	N.D.	N.D.	N.D.	N.D.
Nov-00	7	1	7	1
Dec-00	4	1	14	1
Jan-01	78	1	22	1
Feb-01	9	1	8	1
Mar-01	7	1	33	1
Apr-01	5	2	N.D.	N.D.
May-01	N.D.	N.D.	N.D.	N.D.
Jun-01	19	1	18	1
Jul-01	N.D.	N.D.	N.D.	N.D.
Aug-01	N.D.	N.D.	N.D.	N.D.
Sep-01	N.D.	N.D.	N.D.	N.D.
Oct-01	N.D.	N.D.	8	1
Nov-01	12	1	3	1
Dec-01	5	1	14	1
Jan-02	N.D.	N.D.	N.D.	N.D.
Feb-02	N.D.	N.D.	N.D.	N.D.
Mar-02	N.D.	N.D.	5	5
Apr-02	9	<5	5	<5
AVG	17.79	1.08	11.16	1.28
TOTAL	249	14	212	23

Reduce Monitoring Frequency for TSS and Oil & Grease at Outfall 102

The facility requests to have a reduction in the monitoring frequency for TSS and Oil and Grease at Outfall 102. The existing permit requires TSS and Oil & Grease to be monitored at a frequency of once per two months. The facility respectfully requests to have the monitoring frequency reduced to once per quarter. The facility requests this reduced monitoring frequency based on its excellent compliance history with respect to TSS and Oil & Grease monitoring at this Outfall. This compliance history is summarized in the table on the following page for your convenience. Your consideration with respect to this request is appreciated.

MONTH	TSS		OIL & GREASE	
	AVG (mg/l)	MAX (mg/l)	AVG (mg/l)	MAX (mg/l)
Apr-99	1	1	2	3
May-99	1	2	1	1
Jun-99	2	2	1	1
Jul-99	1	1	1	1
Aug-99	1	2	1	1
Sep-99	2	2	1	1
Oct-99	2	2	1	1
Nov-99	2	3	2	7
Dec-99	1	1	1	1
Jan-00	1	1	1	1
Feb-00	N.D.	N.D.	N.D.	N.D.
Mar-00	2	2	1	1
Apr-00	N.D.	N.D.	N.D.	N.D.
May-00	1	1	1	1
Jun-00	N.D.	N.D.	N.D.	N.D.
Jul-00	2	2	1	1
Aug-00	N.D.	N.D.	N.D.	N.D.
Sep-00	1	1	1	1
Oct-00	N.D.	N.D.	N.D.	N.D.
Nov-00	1	1	1	1
Dec-00	N.D.	N.D.	N.D.	N.D.
Jan-01	1	1	1	1
Feb-01	N.D.	N.D.	N.D.	N.D.
Mar-01	1	1	1	1
Apr-01	N.D.	N.D.	N.D.	N.D.
May-01	3	3	1	1
Jun-01	N.D.	N.D.	N.D.	N.D.
Jul-01	4	4	1	1
Aug-01	N.D.	N.D.	N.D.	N.D.
Sep-01	1	1	1	1
Oct-01	N.D.	N.D.	N.D.	N.D.
Nov-01	3	3	1	1
Dec-01	N.D.	N.D.	N.D.	N.D.
Jan-02	2	2	5	5
Feb-02	N.D.	N.D.	N.D.	N.D.
Mar-02	1	1	5	5
Apr-02	N.D.	N.D.	N.D.	N.D.
AVG	1.61	1.74	1.43	1.70
TOTAL	37	40	33	39

Reduce Monitoring Frequency for TSS at Outfall 302

The facility also requests to have a reduction in the monitoring frequency for TSS at Outfall 302. The existing permit requires TSS to be monitored at a frequency of once per two months. The facility respectfully requests to have the monitoring frequency reduced to once per quarter. The facility has an excellent compliance history with respect to TSS monitoring at this Outfall. This compliance history is summarized in the table on the following page for your convenience. Your consideration with respect to this request is appreciated.

MONTH	302		
	TSS		
	AVG (lbs/day)	AVG (mg/l)	MAX (mg/l)
Apr-99	1	3	4
May-99	1	3	4
Jun-99	1	4	5
Jul-99	1	3	5
Aug-99	1	4	8
Sep-99	1	6	11
Oct-99	1	8	16
Nov-99	1	8	14
Dec-99	1	6	11
Jan-00	1	6	8
Feb-00	1	15	16
Mar-00	1	6	7
Apr-00	1	1	1
May-00	1	10	16
Jun-00	1	7	8
Jul-00	1	13	17
Aug-00	1	6	7
Sep-00	1	6	7
Oct-00	1	8	10
Nov-00	1	16	19
Dec-00	1	18	18
Jan-01	1	16	18
Feb-01	1	16	18
Mar-01	1	19	20
Apr-01	1	20	20
May-01	1	12	18
Jun-01	1	18	24
Jul-01	1	14	16
Aug-01	1	14	20
Sep-01	1	16	17
Oct-01	1	9	12
Nov-01	1	16	17
Dec-01	1	9	9
Jan-02	1	9	9
Feb-02	1	5	5
Mar-02	1	8	10
Apr-02	<1	8	9
AVG	1.0	9.9	12.3
TOTAL	36	366	454

ATTACHMENT G

INVENTORY OF EXPOSED MATERIALS

INVENTORY OF EXPOSED MATERIALS

Material	Purpose/Location	Amount Stored	Type of Storage	Flow Direction
Fuel Oil Tank (not in use)	Heat up boiler/ south of main office	NA	Steel tank	To ditch southwest to lignite pond
Clean Oil Tank	Lubricating oil/east of water treatment building	11,500 gal	Steel tank	To drain valve to ecology pit
Turbine Oil Reservoir	Inside building	11,500 gal	Steel tank	To floor drain to ecology pit
Dirty Oil Tank	Recycled/ east of water treatment building	11,500 gal	Steel tank	To drain valve to ecology pit
On-Road Diesel	Maintenance vehicles	500 gal	Steel tank	To drain valve south to lignite pond
Off-Road Diesel (2 tanks)	maintenance vehicles/ truck maintenance shop	10,000 gal 10,000 gal	Steel tank	To drain valve south to lignite pond
Unleaded Gasoline	Plant vehicles/ oil house	2,000 gal	Steel tank	To drain valve to ditch south to lignite pond
Kerosene	Fueling of plant equipment/ oil house	550 gal	Steel tank	To drain valve to ditch south to lignite pond
Main Power Transformers	East wall of turbine room - outside	16,900 gal	Inside equipment	To drain valve to ecology pit
Sulfuric Acid	Acid tank & demineralizer	15,000 gal	Steel tank	To drain valve to neutralization sump to ash pond
Caustic-Sodium Hydroxide	Caustic tank & demineralizer	15,000 gal	Steel tank	To drain valve to neutralization sump to ash pond
Sodium Hypochlorite	Demineralizer/chemical storage area	(2) 55-gal drums	Poly drums	To floor drain to ecology pit
Used Lube Oil	Holds used oil/ container storage area & tractor shop	1 500 gal 3 300 gal 1 1,000 gal	Steel tanks	Storage area - to ditch south to lignite pond Tractor shop - drain valve south to lignite pond
Naphtha Solvent - Safety Kleen	Solvent/ tank at oil house	550 gal	Steel tank	To drain valve to ditch south to lignite pond
Main Auxiliary Transformer	East of turbine building	12,780 gal	Inside equipment	To drain valve to ecology pit
Reserve Auxiliary Transformer	East of turbine building	15,100 gal	Inside equipment	To drain valve to ecology pit
Spare Main Power Transformer	South of warehouse	11,933 gal	Inside equipment	To drain valve northeast to ditch to makeup pond
Transformers	Switchyard	79,741 gal	Inside equipment	South to discharge canal
Oil Circuit Breakers	Switchyard	15,820 gal	Inside equipment	South to discharge canal
Optimene	pH adjustment for boiler/ chemical drum storage	55-gal drum	Poly drum	To floor drain to ecology pit
Hydroquinone	Oxygen scavenger for boiler/ east wall of boiler room	300-gal tank	Poly drum	To floor drain to ecology pit
Dust Foam Agent	Coal Yard Transfer House	6,000 gal	Poly tank	South to lignite pond
Calcium Hypochlorite	Potable Water Treatment (1) Drum Storage (2) Demineralizer	(40) 4-gal buckets	Poly bucket	To floor drain to ecology pit

ATTACHMENT H

DESCRIPTION OF POTENTIAL POLLUTANT SOURCES AND BEST MANAGEMENT PRACTICES

3.0 DESCRIPTION OF POTENTIAL POLLUTANT SOURCES — AND BEST MANAGEMENT PRACTICES

This section of the Plan identifies pollution sources currently exposed to storm water. Potential sources of storm water contamination include material handling and storage areas, waste storage areas, and areas contaminated by previous leaks and spills. Only those areas representing potential sources of storm water contamination need to be considered in this Plan.

BMPs have been evaluated and implemented for areas that have the potential for materials to contact storm water.

1. Fuel Oil Storage Tank
2. Fuel Oil Unloading Area
3. Turbine Oil Reservoir
4. Clean/Dirty Turbine Oil Tanks
5. Diesel Fuel Tanks
6. Unleaded Gasoline Storage
7. Kerosene Storage Tank
8. Drum Storage
9. Used Oil Storage
10. Chemical Storage Area
11. Acid Storage Area
12. Caustic Storage area
13. Sodium Hypochlorite
14. Scrapyard
15. Main Power Transformers Unit 1
16. Plant Access Road
17. Demineralizer Wastewater Treatment Tank

1. FUEL OIL STORAGE TANK (Decommissioned)

The fuel oil storage tank has been decommissioned as well as the fuel oil pipelines. Current operations do not involve storage or use of #2 Fuel Oil for use as a start-up fuel, rather the facility uses natural gas as the start-up fuel for Unit No. 1. However, the following describes the procedure that would be followed in the event the tank was placed in operation and if a discharge were to occur from this tank.

This 21,000-gallon tank of stored #2 Fuel Oil is set in a diked basin that can retain the entire contents of the tank and would prevent any fuel oil from entering Brandy Branch Reservoir. The chance of an overflow discharge is reduced due to the fact that operators supervising unloading operations know exactly how much oil is in the tank, the tank capacity, and how much oil is being unloaded to the tank. Locks have been installed on the tank and dike drain valves to avoid an accidental spill.

In the event of a discharge from this tank, the dike drain valve, normally closed, will immediately be checked to insure that it is closed. Once contained in the basin, clean-up procedures will involve the use of response equipment specified in the SPCC Plan.

2. FUEL OIL UNLOADING AREA (Not in Use)

The unloading area for the tanker trucks carrying fuel has a chat base spread throughout the area in order to retain any oil accidentally spilled. Check valves that prevent oil from gravimetrically running back through unloading lines are installed. The oil unloading pumps are designed so that the pump cannot discharge to the ground. Warning signs are posted to remind drivers to disconnect all lines before moving their truck.

3. TURBINE OIL RESERVOIR

Oil is transferred regularly to and from this tank for lubricating turbine bearings and hydraulic controls. The tank is large enough to hold the oil in the system. During the oil transfer procedure, personnel are present. The amount of oil in both the clean and dirty oil tanks is checked. Then the dirty oil from the turbine oil reservoir is pumped through a centrifuge to the dirty oil tank. The oil is then pumped through the centrifuge again to the clean oil tank and back to the turbine oil reservoir. All valves that drain oil out of the system have been locked. Operations personnel observe this tank at least once every hour; however, due to the regular frequency of inspections, logs may not be kept of the hourly inspection.

The turbine oil reservoir is provided with high and low level alarms that will immediately notify the operators of a discharge. If a discharge occurs, oil would flow into the secondary containment basin around the tank.

4. CLEAN/DIRTY TURBINE OIL TANKS

One set of clean and dirty oil tanks is used for unit #1. The combined 23,000-gallon concrete catch basin is separated into two compartments that are used to store clean and dirty lubricating oil. The oil is periodically transferred to the centrifuge to be cleaned or to replace dirty oil in the turbine oil reservoir. Personnel are present during the transfer process. The operators know the quantity of oil to be pumped into the clean or dirty oil tank, how much is in each tank prior to the pumping operations, and the capacity of each tank. A level gauge is on each tank that is checked during the process to prevent spills. The process involves opening and closing valves to transfer oil in permanently placed pipes; no hoses or hose connections are involved. Locks have been placed on valves that could drain oil to the concrete catch basin. These tanks are located on the east wall of the water treatment building, facing the reservoir (see site map).

If a discharge occurs, oil would flow into the surrounding basin (which has a locked drain valve) and then to the oil separator that has capacity to contain contents of the tank. If the oil by-passed the separator, the spill could enter Brandy Branch Reservoir. However, personnel would attempt to contain the oil in the separator.

5. DIESEL FUEL TANKS

The two 10,000-gallon Diesel Fuel tanks are used for the fueling of diesel powered coal yard equipment and all other diesel powered vehicles at the plant. In the event of a diesel fuel release from the tanks, the oil will be contained in a concrete diked basin surrounding the aboveground storage tanks.

During heavy rainfall events the diked drain valves are opened to release stormwater and recorded on the Form included in Appendix B. In the event of a discharge from these tanks, the locked dike drain valve, normally closed, will immediately be checked. Once contained in the basin, clean-up procedures will involve the use of sorbent materials readily available from the on-site storage area or response contractors.

6. UNLEADED GASOLINE STORAGE

This 2,000-gallon double-walled tank is used to store unleaded gasoline for plant maintenance vehicles. The concrete tank is self-contained within a monolithic pour with no joints or seams.

7. KEROSENE AND SAFETY CLEAN STORAGE TANK

The 500-gallon kerosene tank is used for the fueling of plant equipment. The Safety-Kleen tank is used for parts cleaning associated with plant maintenance activities.

Both tanks are located within a concrete diked containment system. During heavy rainfall events the diked drain valves are opened to release stormwater and recorded on the Form included in Appendix B. In the event of a discharge from this tank, the locked dike drain valve, normally closed, will immediately be checked. Once contained in the basin, clean-up procedures will involve the use of sorbent materials readily available from the on-site storage area, or through response contractors.

8. DRUM STORAGE

Drums of new oil and lubricants are stored in the Oil House, which is completely enclosed. Drums of waste materials and used oil contained in the lube cubes are stored next to this building and are within a covered area. For housekeeping and management control purposes, the drum storage area is listed on a regular PM program and inspected on a monthly basis to ensure that drip pans and potential leaks are remedied.

9. USED OIL STORAGE TANK

The 1,000 gallon used oil tank is located at the tractor shop. Used oil is collected from heavy mobile equipment and transferred to the used oil storage tank. A steel secondary containment system is provided to hold the contents of this tank. During heavy rainfall events the locked diked drain valves are opened to release stormwater and recorded on the Form included in Appendix B.

10. CHEMICAL STORAGE AREA

This is the covered concrete area adjacent to the demineralizer that stores drums of hypochlorite, ferric sulfate, and polymer. This area is inspected on a regular basis to ensure adequate housekeeping is controlled.

11. ACID STORAGE AREA

Sulfuric acid is used for regeneration of the cation-exchange unit for the demineralized water treatment system. The sulfuric acid is stored in a 15,000-gallon aboveground steel tank located on the east wall of the water treatment building. If a release occurs from the acid tank, the sulfuric acid will be contained within the concrete containment system. For small releases, the acid may be diluted, neutralized and discharged to the demineralizer drain system that will flow from the chemical sump into the ash pond.

During heavy rainfall events the locked diked drain valves are opened to release stormwater and recorded on the Form included in Appendix B.

12. CAUSTIC STORAGE AREA

Sodium hydroxide is used for regeneration of the anion-exchange unit for the demineralized water treatment system. Sodium hydroxide is stored in a 15,000-gallon aboveground steel tank located on the east wall of the water treatment building. If a release occurs from the caustic tank, the sodium hydroxide will be contained within the concrete containment system. During heavy rainfall events the locked diked drain valves are opened to release stormwater and recorded on the Form included in Appendix B.

If a release occurs from the caustic tank, the sodium hydroxide will be contained within the concrete containment system. For small releases, the caustic may be diluted, neutralized and discharged to the demineralizer drain system that will flow from the chemical sump into the ash pond.

13. SODIUM HYPOCHLORITE

Sodium hypochlorite is stored in 55-gallon drums at the water treatment plant and the chemical storage area. One drum remains in storage while the other is in use and located in the water treatment building. In the event of a spill, the first priority is to stop or contain the source by using absorbent pillows, towels or absorbent materials to absorb potential spills. After removal of the spilled material, thoroughly wash down the area with water.

14. SCRAPYARD

The scrapyard is located east of the plant across the intake canal on the peninsula. Equipment must be emptied of oils and liquids prior to placing in the scrapyard. Equipment must be inspected to ensure that materials have been emptied and free of chemicals. Scrap metal is collected for recycling in a scrap bin located south of the plant near the transfer house.

15. MAIN POWER TRANSFORMERS UNIT 1

Transformer oil is not transferred during normal operations. In the event that the oil is changed, replacement is performed with trained personnel that are familiar with the techniques and capacities involved. Level indication gauges are attached to the oil reservoirs to reduce the possibility of over-filling. Valves that drain oil have been plugged to reduce the chance of discharge. These transformers are also equipped with a low level alarm that enables the operators on duty to detect a rupture or leak immediately.

A concrete drain basin surrounds each of the transformers. This basin is designed to catch oil that may be discharged. Drains on basins are kept closed and are opened only after rains to release collected water. If oil were discharged to the basin, it would flow through an oil separator (ecology pit) with a floating oil skimmer and oil tank which is large enough to handle a transformer spill. If the oil bypasses the separator, it would then enter Brandy Branch Reservoir. If the oil bypasses the oil separator, the oil will be contained next to the oil separator discharge with the use of response equipment located on-site. Large spills will be cleaned-up by response contractors.

The spare main transformer has a diked basin large enough to contain the entire contents of the tank. The drain valve is locked in the closed position to prevent any accidental discharge.

16. PLANT ACCESS ROAD

Raw materials are delivered to the plant via the access road that enters the plant site near the northeastern corner and travels directly south toward the main office building. Materials transported along this route include fuel oil, acid, caustic, and various other type chemicals for plant operations. Vehicle accidents are the potential source of spills along the access road.

The access road crosses the major drainage area of the facility. If spills occur, materials could migrate along this overland flow path and ultimately into Brandy Branch Reservoir.

17. DEMINERALIZER WASTEWATER NEUTRALIZATION TANK

The wastewater neutralization tanks are located on the southeast side of the water treatment building. Demineralizer waste enters the waste neutralization tanks for temporary storage prior to discharging to the ash pond.



June 22, 2001

Certified Mail 7000 1670 0001 5872 7544
Return Receipt Requested

Texas Natural Resource Conservation Commission
P. O. Box 13087
Austin, Texas 78711-3087
Attn: Sidne Tiemann, Water Quality Standards Team (MC 150)

RE: Southwestern Electric Power Company (SWEPCO)
Pirkey Power Plant (Pirkey)
TNRCC Permit No. 02496

Dear Ms. Tiemann:

On behalf of SWEPCO and Pirkey, American Electric Power (AEP) hereby submits a flow characteristics study for an unnamed tributary of Hatley Creek that receives discharges from Pirkey Power Plant Outfall 006. This study was conducted in accordance with Item #21 on page 14 of the "Other Requirements" section of the facility's aforementioned wastewater permit.

As part of the requirements of Item #21, flow in the tributary was characterized on a monthly basis. Each characterization was accomplished on or about the 17th day of that respective month. Please note that flow was continuous (perennial) for the tributary for the entire period of the study (one year). A summary of the flows is attached. Please be advised that flows were estimated for the months of January and February. Flows for the remainder of the months of March through December were measured.

The study also required precipitation to be documented. A summary of the precipitation is included with the summary of flows. Please note that the precipitation values listed in the table are monthly totals measured at the power plant for the respective months. Also included are lake elevation values for Brandy Branch Reservoir. I have enclosed all of the precipitation and lake elevation data sheets (daily precipitation amounts recorded) for your convenience. The summary table begins on the following page.

FLOW AND PRECIPITATION MEASUREMENTS
PIRKEY POWER PLANT
OUTFALL 006 TRIBUTARY
January-December 2000

<u>MONTH</u>	<u>FLOW</u>	<u>PRECIPITATION</u>	<u>LAKE ELEVATION</u>
January	22.5 gal/min	1.82 in.	338.6 ft.
February	22.5 gal/min	2.51 in.	339.1 ft.
March	11 gal/min	5.07 in.	339.6 ft.
April	3 gal/min	4.34 in.	340.5 ft.
May	0.5 gal/min	7.06 in.	340.3 ft.
June	1 gal/min	5.89 in.	340.0 ft.
July	3 gal/min	0.42 in.	339.5 ft.
August	1 gal/min	0.29 in.	338.4 ft.
September	0.6 gal/min	1.02 in.	337.8 ft.
October	1.4 gal/min	1.88 in.	337.4 ft.
November	1.6 gal/min	11.03 in.	337.9 ft.
December	0.5 gal/min	6.56 in.	338.6 ft.

There appears to be no direct correlation between precipitation and flow in the tributary (the segment of the tributary in the study essentially comprises the headwaters for that tributary). We believe that this is likely due to the limited amount of surface area flow contribution to this segment of the tributary as compared to the increased ground water flow contribution.

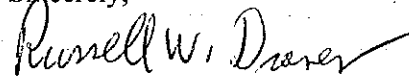
AEP contends that hydrogeologic conditions in the area near Pirkey have changed substantially since the power plant facilities and Brandy Branch Reservoir were constructed. The impact to this area has resulted in an increased hydrogeologic (subsurface) groundwater flow. There is also a corresponding increase in surface flows of groundwater in locations where geologic conditions provide an avenue for groundwater to reach the surface and contribute discharges to respective, adjacent tributaries.

The specific tributary in this study has been impacted by these hydrogeologic changes, and now has a characteristically perennial flow. This is markedly different than the intermittent flow regime that existed for the same tributary prior to construction of the power plant facilities and Brandy Branch Reservoir. AEP requests that flow regime values utilized for calculation of permit limitations for the receiving stream (tributary of Hatley Creek) for Outfall 006 be consistent with those values TNRCC has established to utilize for perennial streams. We ask for your consideration with respect to this request.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please contact Frank Mills at (214) 777-1507 if you have any questions concerning the information submitted or the contents of this letter.

Sincerely,

A handwritten signature in dark ink, appearing to read "Russell W. Draves", written over the printed name.

Russell W. Draves
Water Group Manager
Water & Ecological Resource Services

Enclosures

C: Arne Melson (W/)
Kelly Spencer (W/)
Joel Tomme (W/O)
File PRK.180.45.10.2001 (W/)

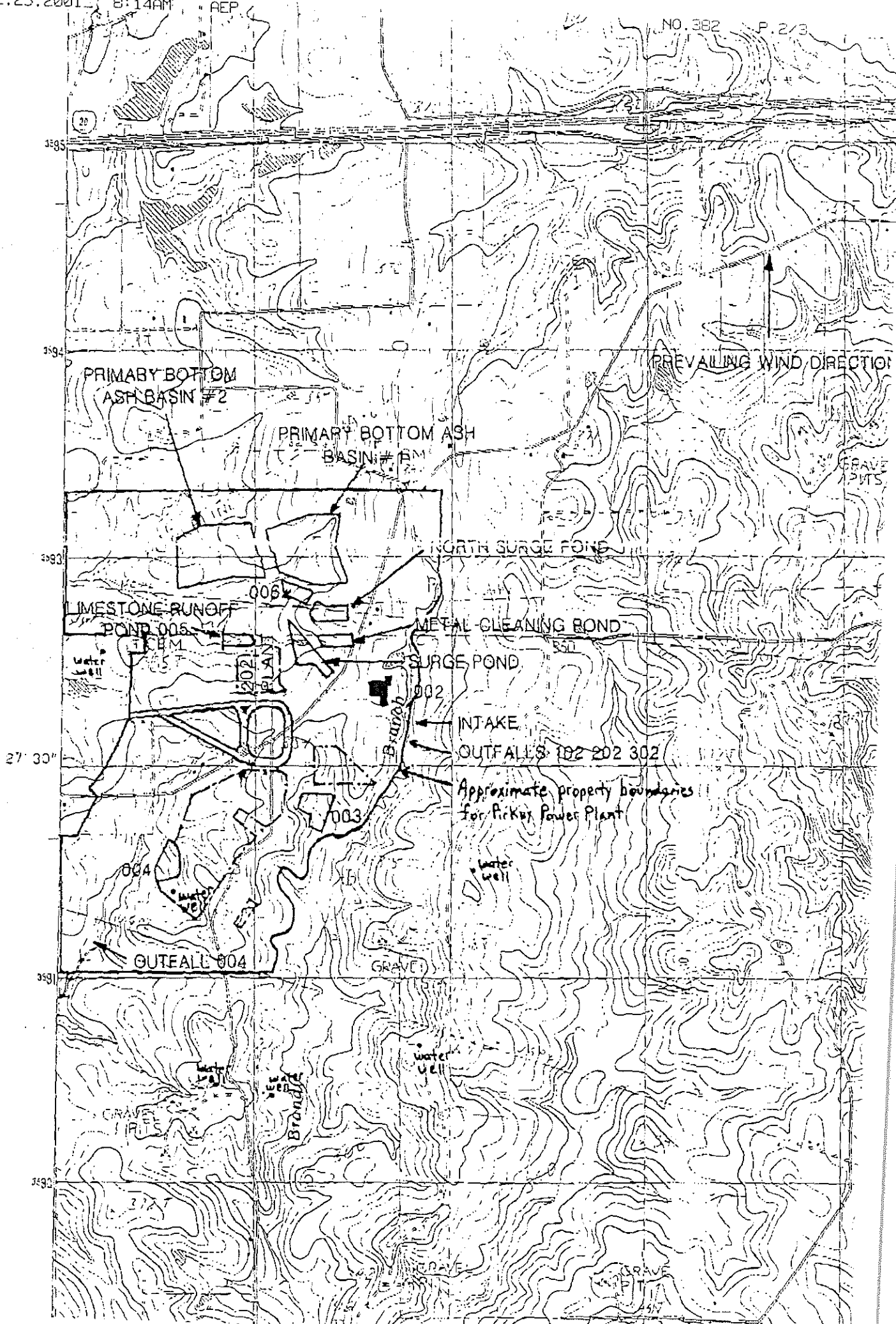
Page 10

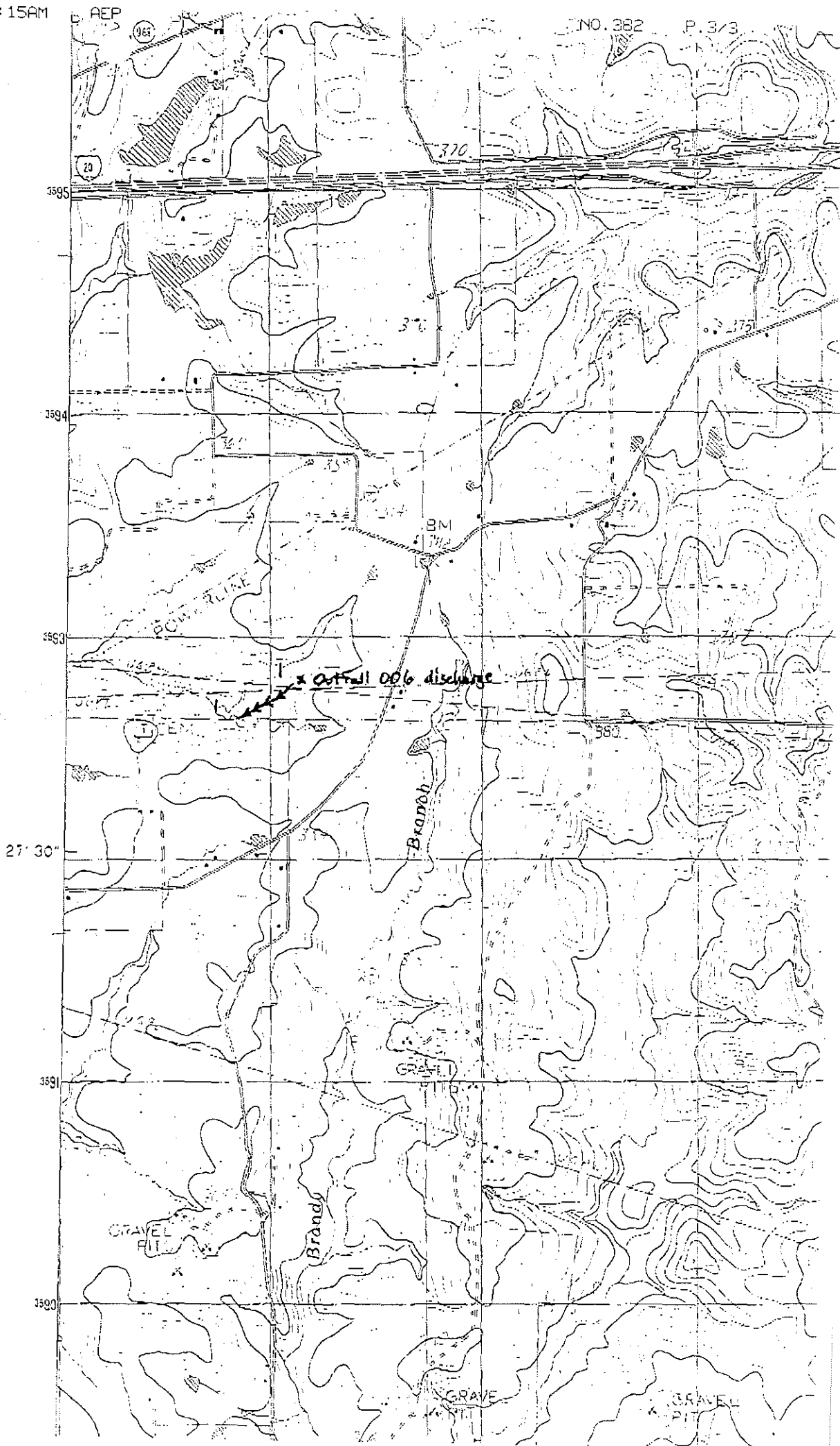
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Sheet1

DATE	RAINFALL	LAKE ELEVATION	
DEC.			
1	0	337.8	
2	0	337.75	
3	0	337.7	
4	0		
5	0		
6	0.03	337.65	
7	0	337.7	
8	0	337.6	
9	0		
10	0	338.6	
11	0	337.5	
12	0.09	337.5	
13	1.88	337.65	
14	0	337.6	
15	0.76	337.7	
16	0		
17	0	337.6	
18	0		
19	0		
20	0		
21	0		
22	0	337.5	
23	0.03		
24	0.14		
25	1.35	337.65	
26	1.81	337.8	
27	0.33		
28	0.14		
29	0		
30	0		
31	0		
MONTH	6.56	338.6	HIGH
YEAR/DATE	47.89	337.5	LOW







NOTICE OF APPLICATION AND PRELIMINARY DECISION
FOR WATER QUALITY TPDES PERMIT AMENDMENT
FOR INDUSTRIAL WASTEWATER

PERMIT NO. 02496

APPLICATION AND PRELIMINARY DECISION. Southwestern Electric Power Company, 2400 Farm-to-Market Road 3251, Hallsville, Texas 75650-7634, which operates the Henry W. Pirkey Power Plant, has applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment to TPDES Permit No. 02496 to authorize removal of monitoring requirements for total dissolved solids at Outfall 002; removal of effluent limitations and monitoring requirements for oil and grease at Outfalls 003, 004, and 005; a reduction in monitoring frequencies for total suspended solids at Outfalls 102, 302, 003, 004, 005, and 006; a reduction in monitoring frequency for oil and grease at Outfalls 102 and 006; and removal of biomonitoring requirements at Outfalls 102 and 006. The current permit authorizes the discharge of condenser cooling water and previously monitored effluent (low volume wastewater via internal Outfall 102, plant "X" treated effluent including metal cleaning wastes, chemical metal cleaning wastes, low volume wastes, coal pile runoff, and ash transport water via internal Outfall 202, and domestic wastewater via internal Outfall 302) at a daily average flow not to exceed 600,000,000 gallons per day via Outfall 002; storm water from the lignite storage area runoff pond on an intermittent and flow variable basis via Outfall 003; storm water runoff from the flue gas desulfurization (FGD)/fly ash sludge landfill on an intermittent and flow variable basis via Outfall 004; storm water from the limestone storage area runoff pond on an intermittent and flow variable basis via Outfall 005; and commingled wastewaters from the ash pond on an intermittent and flow variable basis via Outfall 006. This application was submitted to the TCEQ on September 23, 2002.

The facility is located adjacent to Red Oak Road at a point approximately six miles southeast of the City of Hallsville, Harrison County, Texas. The effluent is discharged via Outfalls 002 and 003, to Brandy Branch Reservoir; thence to Brandy Branch Creek; thence to the Sabine River Above Toledo Bend Reservoir in Segment 0505 of the Sabine River Basin; and via Outfalls 004, 005, and 006 to unnamed tributaries of Hatley Creek; thence to Hatley Creek; thence to the Sabine River Above Toledo Bend Reservoir, in Segment No. 0505 of the Sabine River Basin. The unclassified receiving waters have no significant aquatic life use for the unnamed tributaries of Hatley Creek and Brandy Branch Creek; and high aquatic life use for Hatley Creek and Brandy Branch Reservoir. The designated uses for Segment No. 0505 are high aquatic life use, contact recreation, and public water supply. No significant degradation of high quality receiving waters is anticipated.

The TCEQ executive director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The executive director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, executive director's preliminary decision (as contained in the technical summary and/or fact sheet), and draft permit are available for viewing and copying at the Marshall Public Library, 300 South Alamo Street, Marshall, Texas.

RECEIVED
2003 JUN 16 PM 3:00
GWA-C
CUSTOMER SERVICE BUREAU

TX 87726 0X

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting about this application. The purpose of a public meeting is to provide the opportunity to submit written or oral comment or to ask questions about the application. Generally, the TCEQ will hold a public meeting if the executive director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

Written public comments and requests for a public meeting should be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 within 30 days of the date of newspaper publication of this notice.

OPPORTUNITY FOR A CONTESTED CASE HEARING. After the deadline for public comments, the executive director will consider the comments and prepare a response to all relevant and material, or significant public comments. The response to comments, along with the executive director's decision on the application, will be mailed to everyone who submitted public comments or who requested to be on a mailing list for this application. If comments are received, the mailing will also provide instructions for requesting a contested case hearing or reconsideration of the executive director's decision. A contested case hearing is a legal proceeding similar to a civil trial in a state district court.

A contested case hearing will only be granted based on disputed issues of fact that are relevant and material to the Commission's decision on the application. Further, the Commission will only grant a hearing on issues that were raised during the public comment period and not withdrawn. Issues that are not raised in public comments may not be considered during a hearing.

EXECUTIVE DIRECTOR ACTION. The executive director may issue final approval of the application unless a timely contested case hearing request or a timely request for reconsideration is filed. If a timely hearing request or request for reconsideration is filed, the executive director will not issue final approval of the permit and will forward the application and requests to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

MAILING LISTS. In addition to submitting public comments, you may ask to be placed on a mailing list to receive future public notices mailed by the Office of the Chief Clerk. You may request to be added to: (1) the mailing list for this specific application; (2) the permanent mailing list for a specific applicant name and permit number; and/or (3) the permanent mailing list for a specific county. Clearly specify which mailing list(s) to which you wish to be added and send your request to the TCEQ Office of the Chief Clerk at the address above. Unless you otherwise specify, you will be included only on the mailing list for this specific application.

INFORMATION. If you need more information about this permit application or the permitting process, please call the TCEQ Office of Public Assistance, Toll Free, at 1-800-687-4040. General information about the TCEQ can be found at our web site at www.tceq.state.tx.us.

Further information may also be obtained from Southwestern Electric Power Company at the address stated above or by calling Mr. Franklin Mills, American Electric Power at (214) 777-1507.

Issued:

JUN 10 2003

JUN 10 11 11 AM 2003

RECEIVED
JUN 10 2003

APPLICATION BY § BEFORE THE
SOUTHWESTERN ELECTRIC § TEXAS NATURAL
POWER COMPANY § RESOURCE CONSERVATION
FOR PERMIT NO. 02496 § COMMISSION

EXECUTIVE DIRECTOR'S RESPONSE TO COMMENTS

The Executive Director of the Texas Natural Resource Conservation Commission (TNRCC or Commission) files this Response to Comments on Southwestern Electric Power Company, Water Quality TPDES Permit No. 02496. The Office of the Chief Clerk received one comment letter.

SABINE RIVER AUTHORITY

The Sabine River Authority (SRA) submitted one comment letter to the TNRCC on May 21, 1999.

COMMENT:

The SRA noted in its letter that the discharge from the Southwestern Electric Power Company facility is to Brandy Branch Reservoir, then to Brandy Branch Creek, then to the Sabine River in Segment No. 0505 of the Sabine River Basin. The SRA is concerned with protecting the water quality of the state and is concerned with any effluent in the Sabine River Basin that might contribute to the degradation of water quality. The SRA reviewed Southwestern Electric Power Company's compliance record based on the most recent Self-Reporting Data provided to them by the TNRCC. The SRA is concerned with the number of times the facility has not met the set limits for oil and grease, pH, and TSS. Although the SRA does not oppose the permit renewal, it encourages the Commission to do all it can to ensure that the Southwestern Electric Power Company facility meets all of its permit requirements in the future.

RESPONSE:

Southwestern Electric Power Company, as a permittee, is required to meet all of its permit requirements. If the facility is operated in accordance with Commission rules and the draft permit, there will not be a threat to the water quality of the receiving waters. If the facility is not operated in compliance with the Commission's rules and the permit, the facility will be subject to enforcement and other administrative penalties. The TPDES permit will be issued with the same discharge limits as those described in the draft permit. The Commission acknowledges and appreciates the SRA's comment.

Respectfully submitted,

TEXAS NATURAL RESOURCE
CONSERVATION COMMISSION

Margaret Hoffman, Director
Environmental Law Division

By Monique Norman
Monique Norman, Staff Attorney
Environmental Law Division
State Bar No. 00797082

CERTIFICATE OF SERVICE

I certify that on December 28, 1999, the "Executive Director's Response to Comments" was filed with the Texas Natural Resource Conservation Commission's Office of the Chief Clerk.

Monique Norman
Monique Norman, Staff Attorney
Environmental Law Division
State Bar No. 00797082

APPLICATION BY
SOUTHWESTERN ELECTRIC
POWER COMPANY
FOR PERMIT NO. 02496

§
§
§
§

BEFORE THE
TEXAS NATURAL
RESOURCE CONSERVATION
COMMISSION

CHIEF CLERK'S OFFICE

2019 FEB 20 AM 9:40

RECEIVED
02/20/19

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Respectfully submitted,

TEXAS NATURAL RESOURCE
CONSERVATION COMMISSION

Margaret Hoffman, Director
Environmental Law Division

By Monique Norman
Monique Norman, Staff Attorney
Environmental Law Division
State Bar No. 00797082

Mailing List
Southwestern Electric Power Company
TPDES Permit No. 02496

FOR THE APPLICANT:

Michael Madison, President
Southwestern Electric Power Company
P. O. Box 21106
Shreveport, Louisiana 71156

Franklin Mills
Central and South West Services, Inc.
P. O. Box 660164
Dallas, Texas 75266-0164

FOR THE PROTESTANTS/INTERESTED
PARTIES:

Cynthia L. Darbonne
Sabine River Authority of Texas
Environmental Services Division
801 Owens-Illinois Road
Orange, Texas 77632

FOR THE EXECUTIVE DIRECTOR:

Monique Norman, Staff Attorney
TNRCC Legal Division MC 173
P.O. Box 13087
Austin, Texas 78711-3087

Kimberly Craig
TNRCC Water Permits & Resource
Management Division
Wastewater Permitting Section MC 148
P.O. Box 13087
Austin, Texas 78711-3087

FOR THE OFFICE OF THE CHIEF
CLERK:

Docket Clerk
P.O. Box 13087
TNRCC Office of the Chief Clerk MC 105
Austin, Texas 78711-3087

FOR THE PUBLIC INTEREST COUNSEL:

Blas Coy, Jr., Attorney
TNRCC Public Interest Counsel MC 103
P.O. Box 13087
Austin, Texas 78711-3087

Robert J. Huston, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
John M. Baker, *Commissioner*
Jeffrey A. Saitas, *Executive Director*



TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

January 11, 2000

TO: Persons on the attached mailing list

RE: **Southwestern Electric Power Company**
TPDES Permit No. 02496

This letter is your notice that the Executive Director of the Texas Natural Resource Conservation Commission has issued final approval of the above-named application. Enclosed is a copy of the Executive Director's Response to Comments.

You may file a motion for reconsideration with the Chief Clerk within 20 days after the date of this letter. A motion for reconsideration is a request for the Commission to review the Executive Director's decision. Any motion must explain why the Commission should review the Executive Director's decision.

The deadline for filing motions for reconsideration on this matter is **January 31, 2000**. An original and 11 copies of the motion must be filed with the Chief Clerk, and one copy sent on the same day to all individuals on the attached mailing list. The Chief Clerk's mailing address is Office of the Chief Clerk - MC 105, Texas Natural Resource Conservation Commission, P.O. Box 13087, Austin, Texas 78711-3087. If a motion for reconsideration is not acted on by the Commission within 45 days after the date of this letter then the motion shall be deemed overruled.

Individual members of the public may seek further information by calling the TNRCC Office of Public Assistance, toll free, at 1-800-687-4040.

Sincerely,

A handwritten signature in cursive script, reading "LaDonna Castañuela".

LaDonna Castañuela
Chief Clerk

LC/is

cc: TNRCC Region 5
See attached mailing list

Robert J. Huston, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
John M. Baker, *Commissioner*
Jeffrey A. Saitas, *Executive Director*



TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

January 11, 2000

Mr. Michael Madison, President
Southwestern Electric Power Company
P.O. Box 21106
Shreveport, Louisiana 71156

Re: Southwestern Electric Power Company, Permit No. 02496

Dear Mr. Madison:

Enclosed is a copy of the above referenced permit for a wastewater treatment facility issued on behalf of the Executive Director pursuant to Chapter 26 of the Texas Water Code.

Self-reporting or Discharge Monitoring Forms and instructions will be forwarded to you from the Water Quality Management Information Systems Team so that you may comply with monitoring requirements. For existing facilities, revised forms will be forwarded if monitoring requirements have changed.

Enclosed is a "Notification of Completion of Wastewater Treatment Facilities" form. Use this form when the facility begins to operate or goes into a new phase. The form notifies the agency when the proposed facility is completed or when it is placed in operation. This notification complies with the special provision incorporated into the permit.

Should you have any questions, please contact Ms. Kimberly Craig of the Texas Natural Resource Conservation Commission's Wastewater Permitting Section at (512) 239-4433, or if by correspondence, include MC 148 in the letterhead address below.

Sincerely,

A handwritten signature in black ink, appearing to read "Ronald R. Pedde".

Ronald R. Pedde, P.E., Director
Water Permits & Resource Management Division

RRP/kc

Enclosures

cc: TNRCC Region 5
Ms. Kimberly Craig, Permit Writer, Industrial Permits Team, MC 148
Mr. Franklin Mills, Central and South West Services, Incorporated, P.O. Box 660164, Dallas, Texas 75266-0164

NOTICE OF WATER QUALITY APPLICATION PERMIT NO. 02496

APPLICATION. Southwestern Electric Power Company, P.O. Box 21106, Shreveport, Louisiana 71156, has applied to the Texas Natural Resource Conservation Commission (TNRCC) for a major amendment of TNRCC Permit No. 02496 to authorize the following: reduction in the monitoring frequency for total selenium at Outfall 006; reduction of monitoring frequencies for total suspended solids and oil and grease at Outfall 102; and reduction of monitoring frequency for biochemical oxygen demand (5-day) and total suspended solids at Outfall 302. The current permit authorizes the discharge of commingled water from Brandy Branch Reservoir on an intermittent and flow variable basis via Outfall 001; condenser cooling water and previously monitored effluents at a daily average flow not to exceed 600,000,000 gallons per day via Outfall 002, which will remain the same; stormwater from the lignite storage area runoff pond on an intermittent and flow variable basis via Outfall 003, which will remain the same; stormwater runoff from the flue gas desulfurization (FGD)/fly ash sludge landfill on an intermittent and flow variable basis via Outfall 004, which will remain the same; stormwater from the limestone storage area runoff pond on an intermittent and flow variable basis via Outfall 005, which will remain the same; and commingled wastewaters from the ash pond on an intermittent and flow variable basis via Outfall 006, which will remain the same. Issuance of this Texas Pollutant Discharge Elimination System (TPDES) permit will replace the existing NPDES Permit No. TX 0087726, issued on April 4, 1998 and TNRCC Permit No. 02496, issued on March 25, 1994. The applicant operates the Henry W. Pirkey Power Plant.

The plant site is located adjacent to Red Oak Road at a point approximately six miles southeast of the City of Hallsville, Harrison County, Texas. The effluent is discharged via Outfalls 002 and 003 to Brandy Branch Reservoir, thence to Brandy Branch, thence to the Sabine River Above Toledo Bend Reservoir in Segment 0505 of the Sabine River Basin; and via Outfalls 004, 005, and 006 to unnamed tributaries of Hatley Creek, thence to Hatley Creek, thence to Sabine River Above Toledo Bend Reservoir in Segment 0505 of the Sabine River Basin. The unclassified receiving waters have no significant aquatic life use, limited aquatic life use, and high aquatic life use for various unnamed tributaries of Hatley Creek; no significant aquatic life use for Brandy Branch; high aquatic life use for Brandy Branch Reservoir, and high aquatic life use for Hatley Creek. The designated uses for Segment No. 0505 are high aquatic life use, contact recreation, and public water supply. No significant degradation of high quality receiving waters is anticipated.

The Executive Director of the TNRCC has prepared a draft permit which, if approved, will authorize the conditions under which the facility must operate.

PUBLIC COMMENT/PUBLIC MEETING. Written public comments and requests for a public meeting should be submitted to the Office of Chief Clerk, at the address provided in the information section below, within 30 days of the date of newspaper publication of the notice. A public meeting is intended for the taking of public comment, and is not a contested case hearing. A public meeting will be held if the Executive Director determines that there is a significant degree of public interest in the application.

CONTESTED CASE HEARING. The TNRCC may grant a contested case hearing on this application if a written hearing request is filed within 30 days from the date of newspaper publication of this notice. The Executive Director may approve the application unless a written request for a contested case hearing is filed within 30 days after newspaper publication of this notice. To request a contested case hearing, you must submit the following: (1) your name (or for a group or association, an official representative), mailing address, daytime phone number, and fax number, if any; (2) applicant's name and permit number; (3) the statement "[I/we] request a contested case hearing." (4) a brief and specific description of how you would be affected by the application in a way not common to the general public; and (5) the location and distance of your property relative to the proposed activity. You may also submit your proposed adjustments to the application/permit which would satisfy your concerns. Requests for a contested case hearing must be submitted in writing to the TNRCC Office of the Chief Clerk at the address provided in the information section below.

If a hearing request is filed, the Executive Director will not issue the permit and will forward the application and hearing request to the TNRCC Commissioners for their consideration at a scheduled Commission meeting.

INFORMATION. Written hearing requests, public comments or requests for a public meeting should be submitted to the Office of the Chief Clerk, MC 105, TNRCC, P.O. Box 13087, Austin TX 78711-3087. For information concerning the hearing process, please contact the Public Interest Counsel, MC 103, the same address. For additional information, individual members of the general public may contact the Office of Public Assistance at 1-800-687-4040. General information regarding the TNRCC can be found at our web site at www.tnrcc.state.tx.us.
Issued: Oct 26, 1999
LaDonna Castanuela, Chief Clerk
Texas Natural Resource Conservation Commission

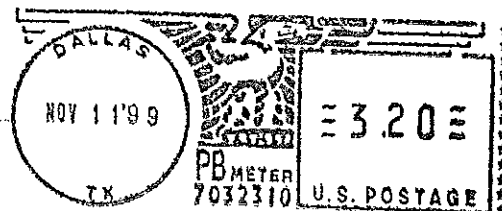
CERTIFIED

Z 220 996 364

MAIL



Central and South West Services, Inc.
P.O. Box 660164 • Dallas, Texas 75266-0164





Central and South West Services, Inc.

1616 Woodall Rodgers Freeway
Dallas, Texas 75202
P.O. Box 660164 • Dallas, Texas 75266-0164
214-777-1000

November 11, 1999

Certified Mail
Return Receipt Requested

Texas Natural Resource Conservation Commission
P.O. Box 13087
Austin, TX 78711-3087
Attn: Notice Team, Chief Clerk's Office (MC 105)

RE: TNRCC TPDES Permit No. 02496
Pirkey Power Plant (Pirkey)
Southwestern Electric Power Company (SWEPCO)

Dear Clerk's Office:

On behalf of SWEPCO and Pirkey, Central and South West Services, Inc. (CSWS) hereby submits an original newspaper clipping and a sworn affidavit to verify that the aforementioned TPDES Permit has been placed on public notice. The sworn affidavit certifies that a public notice has been published in a newspaper of general circulation in the county (Harrison) where Pirkey Power Plant is located. The public notice included the information supplied by your offices for issuance of Wastewater Discharge Permit No. 02496 for discharges of industrial wastewater.

Please call me at (214) 777-1507 should you have any questions regarding this notice. Thank you for your attention to this matter.

Sincerely,

Franklin L. Mills

Franklin L. Mills
Water Quality Specialist

Enclosures

C: Arne Melson (w/)
Bobby Welch (w/)
Brian Bond (w/)
Russ Draves (w/o)
Joel Tomme (w/)
Mark Griffith (w/)
Dale Shively (w/)
David Hall (w/o)
File: PRK.180.40.10.1999 (w/)

A Member of the Central and South West System

Central Power and Light Company • Public Service Company of Oklahoma • Southwestern Electric Power Company
Seaboard plc • West Texas Utilities Company • CSW Energy, Inc.

CHIEF CLERK'S OFFICE

NOV 11 1999

TEXAS NATURAL
RESOURCE CONSERVATION
COMMISSION

TNRCC-OFFICE OF THE CHIEF CLERK
MC-105 Attn: Notice Team
PO BOX 13087
AUSTIN TX 78711-3087

SOUTHWESTERN ELECTRIC
POWER CO
PERMIT # 02496

AFFIDAVIT OF PUBLICATION

STATE OF TEXAS §

COUNTY OF HARRISON §

CHIEF CLERK'S OFFICE

1999 NOV 16 11:11:21

TNRCC-OFFICE OF THE CHIEF CLERK

Before me, the undersigned authority, on this day personally appeared

DIANNE GRAY, who being by me duly sworn,
(name of newspaper representative)

deposes and says that (s)he is the Classified Rep
(title of newspaper representative)

of the Marshall News Messenger; that said newspaper is regularly
(name of newspaper)

published in HARRISON County, Texas, and generally circulated in
HARRISON, MARION, RUST, PANOLA County/Counties, Texas;

that the attached notice was published in said newspaper on the following date(s) to wit:

Nov. 4, 1999

Dianne Gray

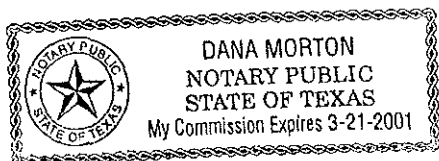
Newspaper Representative's Signature

Subscribed and sworn to before me this the 8th day of November,
19 99, to certify which witness my hand and seal of office.

(Seal)

Notary Public in and for the State of Texas

Dana Morton
Print or Type Name of Notary Public

My Commission Expires 3-21-01

Permit Review log

Permit/facility	Date reviewed	Issues
TXU Generation Co.	6/5/03	Withdrawal of objection
City of Potosi	6/5/03	Approval
City of Groves	6/4/03	Approval
AR TERIS LLC - ENSCO	6/19/03	Approval
TH Land Texas FM 1093 & 723	6/18/03	Cond. Approval
Waterside Water, LLC ^{TX owner}	7/14/03	Approval - new
City of Pearland	7/17/03	approval -
Harris Co. MUD #1	7/17/03	Cond. approval
City of Port Arthur	7/21/03	minor - 0.1 mgd approval
A Schulman Inc ^{TX} mud	7/21/03	approval
TXU Generation Co.	7/22/03	pending variance General objection ^{approved}
NW Harris Co. MUD #15	7/24/03	Approval

